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Subject: POPULATION STUDIES **Code No. : 15**

SYLLABUS

UNIT I: Introduction and Sources of Population Data

History, definition, nature and scope of Population Studies, relationship of other social sciences with population studies, Social structure, Social and Racial Groups, Society and Culture and its role in Population studies, Social Institutions (family, marriage, kinship, and religion) and their role in influencing population studies, Social change in India, Tribes in India and their culture,

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Social-Psychological concepts and its relevance to Population studies, communication concepts, processes and its relevance in context of Population studies.

Population trends, global variation in population size and growth, history of Population in India, Current Population Scenario and Demographic profile of India and States.

Basic demographic concepts, components of population change.

Sources of Population data: Population census: History of population; definition and scope Indian census: Historical background, coverage, features and uses. Strengths and weaknesses of various data sources in India,

Vital Statistics: Historical background, Civil Registration System in India: history, coverage, problems of civil registration, Sample Registration System (SRS), advantages and limitations.

Population Surveys: Meaning, Scope, uses, limitations; Major surveys: National Sample Surveys (NSS), World Fertility Survey (WFS), Demographic Health Surveys (DHS), Reproductive and Child Health Survey (RCHS). National Family Health Surveys (NFHS), Comprehensive Nutrition Survey; Aging survey.

Data appraisal (Evaluation and Adjustment of Data): Types and sources of errors in population data, Adjustment in Age data-Whipple's Index, Myer's Index, United Nations, Age Sex Accuracy Index-Assumptions, Applications and Limitations, Completeness of Vital Registration Data, Chandrasehkaran - Deming formula. Smoothing of Age Data.

UNIT II: Methods of Demographi/Population Analysis:

Rates, Ratio, Proportion, percentages, density, incidence and prevalence, person-years

Rate of Population Growth: Arithmetic, Geometric and Exponential growth rates, Decadal growth rate Doubling time, concept of population stabilization and net reproduction rate unity

Crude and Standardized methods for fertility and mortality estimates.

Location of event in time and the Lexis diagram.

Method of Population Projection: Mathematical methods of population projection (Linera, Exponential, Polymonial, Gompertz and Logistic Growth Curves for Population Projection); Component method of Population projection; Sub-national population projection; Projection methods of labour force, school enrolment, workforce and households etc.

Population Projections by United Nations, World Bank and Expert Committee of Government of India,

Population estimates: Inter censual/Post-censual estimates of population, population pyramid.

Population and sample parameters, sampling distribution of mean and standard error.

Statistical Methods: Frequency distribution, descriptive and inductive statistics, measures of central tendency (mean, median, mode); measures of dispersion (range, variance and standard deviation); correlation and linear regression, introduction to testing of statistical hypothesis and test of significance, interpolation and extrapolation.

UNIT III: Population Composition and Change

Spatial and temporal changes in the size and distribution of population-global perspective with focus on India

Age and sex structure of population in developed and developing countries

Composition of India's population: Demographic, social, economic and Cultural factors affecting age-sex structure of population and its relevance in population dynamics: global and India perspectives; Spatial distribution of population: measures of concentration of population: density, distribution-dissimilarity index, tempo of urbanization, Rank-size rule, Gini's concentration ratio, Lorenz curve, etc. ; Factors affecting spatial distribution, density and concentration of population-global, national, regional patterns.

Population Ageing: Concepts and measures of population ageing, components of population ageing. Trends and pattern of ageing in India and States.

Demographic dividend, Sex-ratio, Sex-ratio at birth, Child-Women ratio, Median Age, Age-Sex Pyramid, Dependency Ratio (Child Dependency Ratio, Old Dependence Ratio, Total Dependency Ratio).

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Social, economic and health aspects of Ageings; Living arrangements, family support, dependency; Emerging issues related to elderly.

UNIT IV: Nuptiality and Fertility

Nuptiality: Concepts and sources of data; Measures- crude marriage rate, age specific marriage rates, order specific marriage rates, singulate mean age at marriage (SMAM); -

a. Singulate Mean Age at Marriage (SMAM) - Synthetic Cohort and Decadal Synthetic Cohort Method.
b. Indices of Nuptiality (Coale's Indices)

Marriage patterns in India: levels, trends and differentials in age at marriage, divorce, widowhood, widow remarriage

Levels and trends in widowhood in India and States, Impact of changes in widowhood/ divorce on fertility, mean age of widowhood/divorce from Census data.

Fertility:

Basic concepts and terms used in study of fertility.

Fertility Indicators: sources of data and their computation, Cross-sectional or Period indicators: Crude Birth Rate (CBR), General Fertility Rate (GFR), Age Specific Fertility Rate (ASFR), Age Specific Marital Fertility Rate (ASMFR), Total Marital Fertility Rate (TMFR), Total Fertility Rate (TFR),Gross Reproduction Rate (GRR), Net Reproduction Rate (NRR), Replacement level Fertility, Birth order statistics, Child Women ratio, Order Specific Fertility Measures.

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Cohort Indicators: Children ever born, completed family size.
Age Standardization or Adjustment, Direct and Indirect Standardized Birth Rates, Sex-Age Adjusted Birth Rate.

Levels, Trends and Differentials of Fertility in India, Determinants of Fertility: Post-Partum Amenorrhoea (PPA), Breast feeding, Sterility, Fecundity and other factors.

Framework of fertility analysis: Davis and Blake Intermediate Variable Framework, Bongaart's Proximate Determinants, Lee and Bulatoo Framework of Fertility.

Indirect Methods of Estimation of Fertility : Coale-Trussell's Model for Age Pattern of Fertility, Reverse Survival Technique of Fertility Estimation, Rele Technique, P/F Ratio Technique, Brass P1/F1Ratio Technique.

Fertility transition in developed and developing countries with special reference to India, Implications of below replacement level of fertility

UNIT V-Mortality, Morbidity and Health

Mortality: Basic concept, definitions and measures of pregnancy wastage (miscarriage, abortion, fetal death, still birth), live birth; early, late and post neo-natal deaths; infant and child death.
Mortality Indicators: Crude Death Rate (CDR), Age Specific Death Rate (ASDR), Infant Mortality Rate (IMR), Under-five mortality Rate, Neo-natal mortality rate, Post-natal mortality rate; Maternal Mortality Rate (MMR).

Infant Mortality: Levels and determinants of Infant and Child mortality in India, causes of Infant mortality (Endogenous and Exogenous). Mosley and Chen's Framework for Child Survival

Sources of Mortality Data and its Quality: Measures of mortality, need and importance of the study of mortality for policy and public interventions; relative merits and demerits of mortality measures.

Levels and Trends in mortality by developed and developing regions with special reference to India, age and sex specific mortality, differentials in mortality by place of residence and socio-economic characteristics, factors responsible for high mortality in the past and reasons for mortality decline in developing countries.

Indirect method of estimation of Infant and Child mortality rates
Direct and Indirect standardization of mortality rates,

Life Table: Basic concepts, types and forms of life tables and Model Life Table, need of Model Life Table (MLT), UN Model Life Table, computation of life table, construction of life table based on age-specific deaths rates (ASDR), underlying assumptions of life table construction using ASDRs of community during specified period, use of life table application of life table in demographic analysis.

Morbidity: Concepts and definitions of health and morbidity; sources of data and measures of morbidity.
Morbidity Indicators: Incidence, Prevalence and Case-fatality ratio.

Overview of epidemiological transition in developed and developing countries with special reference to India

Health: Reproductive Health:- Definition, rationale, approach, evolution of ideas about reproductive health; Maternal morbidity, Emergency obstetric care, Adolescent reproductive morbidity, Strategies to reduce maternal morbidity and mortality in India, Abortion related issues.

Reproductive Tract Infection (RTI)/Sexually Transmitted Infection (STI), HIV/AIDS and their implications.
Reproductive Rights and Ethical Issues

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Causes of Deaths Statistics: Definition and sources of causes of death statistics, Introduction to International Classification of Diseases (ICD – X (1990), Global leading causes of death with special reference to Asia and India; Distribution of deaths by main causes and by age, life expectancy.

Burden of Disease Estimates: Need for the study of burden of disease; Basic concepts; Measures of Burden of Disease; and current scenario of burden of disease in India by States/UTs.

Ageing and Burden of Diseases, Life expectancy and disability free life expectancy,

Unit VI-Urbanization and Migration

Urbanization:

Concept and definition of 'Urban' in India and other countries.

Process of urbanization, measures and sources of data.

Inter-relationship between urbanization and migration in developed and developing countries.

Trends, patterns, characteristics and differentials of Urbanization in India.

Classification of settlements, characteristic, evolution and growth, morphology, land use patterns and functions, spatial organisations, principles of centrality and hierarchy, methods of measuring centrality, central place region, contribution of Christaller and Losch.

Urbanisation and Urban Change – changing distribution of world's urban population, principles and causes of urban growth, urban hierarchy (rank size rule), characteristics of primate city, cycle of urbanization, economic and social theories of formation of urban centres, stages of urban development models, demographic and social change in post World War-II urban system in developed and developing countries.

Socioeconomic and environmental consequences of urbanization and urban growth in developed and developing countries:– employment, urban informal sector, basic amenities, housing, health, education, elderly population, environment, sustainability, smart cities and urban future.

World Cities:– hierarchy of world cities, growth and activities of the institutions of global capital.

Migration:

Basic concepts and definitions - circulation, mobility, commutation and migration.
Sources of data - nature, coverage and limitations of the available data.

Types of migration: internal and international

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Trends, Patterns and differentials of Internal and international migration.
Determinants and consequences of Internal and International migrations.
Refugees – issues and implications.

Direct and indirect measures of migration - estimation of lifetime and inter-censal migration rates from census data, indirect measures of net internal migration using Vital Statistics Method, National Growth Rate Method, Census and Life Table Survival Ratio methods, Methods of estimating international migration.

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Theories of Internal and International Migration - Ravenstein, Everett Lee, Lewis-Fei-Ranis model, Todaro, Stouffer, Zelinsky, Neoclassical Economic Theory, New Household Economic Theory, Duel Labour Market Theory, World System Theory, Social Network Theory, Cumulative Causation Theory.

Unit VII-Population, Development and Environment

Environment in the context of development, interrelationship between population growth, environment and development

Concepts of Development and its Measures: Limitations of per capita income as an indicator of development, human centered development-welfare approach, investment in human-capital approach, Human Development Index (HDI), Physical Quality of Life Index (PQLI), Concepts of Social Development, Social capital and Social change; Social Development Index (SDI), Gender Development Index (GDI), Millennium Development Goals (MDG), Concept of Sustainable Development, Sustainable Development Goals (SDG),Concepts and Measures of Poverty, Human Poverty Index (HPI).

Effect of development on population dynamics, age structure transition, demographic transition, demographic dividends and population ageing.

Views regarding the relationship between population and development:

(i) Views of different religions on pro-natalist and prosperity argument: Greek philosophers' views, Chinese philosopher Confucius writings on optimum population, Classical Mercantilist and Physiocrats views, Socialist and Marxist views etc.
(ii) Pessimistic perspective: Population growth viewed as an obstacle to development, Malthus theory, Coale and Hoover study, Tragedy of commons, Limits to growth study and Enke's investment model etc.
(iii) Optimistic perspective: Population growth is conducive to development – Mercantilist views, Colin and Condorcet views, views of Colin Clark, Ester Boserup and Julian Simon etc.
(iv) Neutralist/revisionist perspective: Need to study linkages between population change and development- views of Simon Kuznets, Allan Kelly and Robert Schmidt, Bloom and Williamson etc.

Population and Resources:
Natural resources: types of natural resources, renewable and non-renewable resources, resources scarcity and resource depletion.

Capital resources: effect of demographic factors on savings and investments, technology and development; importance of technology to improve the productivity of physical assets.

Human resources: quantitative aspects:- concepts of labour force, economically active population, unemployment, types of unemployment; disguised, seasonal, frictional and chronic. Factors affecting demand and supply of labour, effect of population growth and development on structure of employment.

Implications of population growth: on food supply, water, sanitation, housing, employment, health, education , energy, etc; environmental degradation - air pollution, greenhouse effect – global warming, climate change; pressure of population growth on land use:- soil erosion, desertification, deforestation, and soil salinity etc.

Human Eco-systems:- ecological imbalance caused by natural and human factors and their impacts on human ecological systems, human perception and adjustment to imbalance, sustainable human eco-systems.

Guidelines for environmental protection, international protocols
Developmental plans, polices and strategies in India in the context of Population and environment.

Unit VIII-Population Issues: Gender and Special Groups

Gender:

Concept and meaning of gender; evolution of gender in historical perspective,
Gender and its relationship with components of population: Age-sex structure, Fertility, Mortality, Migration.

Major morbidity and mortality burden in the developing world with major focus on India, Sex ratio at births, major health problems experienced by women and men, reproductive health of women and men in developing world, differentials in use of male and female methods of contraception

Health and Nutrition issues of adolescent boys and girls , abuse and maltreatment, puberty, sexual debut, adolescent pregnancy, abortion, women and family planning programs, contraceptive technology, Major risk factors of men's health: masculinity, alcoholism, tobacco and drug consumption, accident etc.

Gender dimension of economic development: women's access to economic resources, entitlements, land ownership, inheritance laws, access to credit, measurements of women's work, profiling women's work, informal sector involvement, working condition, maternity benefits, wage differentials, gender and poverty

Globalization: changing pattern of economic activity, issues of marginalization and vulnerability along with agency, negotiation and spaces of power, gender divisions in urban labor markets, gender and migration

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Housing, household environment and its differential impact on men and women's life, Environmental degradation: changes in climate, water table and land use and their differential impact on men and women

The Concept of gender mainstreaming: gender mainstreaming in various health and development sectors- e.g. Agriculture, Health, Education, gender in work place (public & private) etc.

Gender inequality and status of women:- social, economic, cultural, health and domestic violence, women autonomy and empowerment and its demographic implications, gender empowerment measure (GEM).

Scheduled Castes (SC) and Scheduled Tribes (ST): size, growth, composition and distribution in India, development plans and programmes for SC and ST and their impact on population.

Disabled / Physically challenged population: size, growth and distribution in India, classification of physically challenged population.

Development Plans and Programmes for physically challenged population in India.

Unit –IX-Population & Health Policies and Programmes

National Policies: Evolution and Development of Population, Health and related Policies viz., National Population Policy 1977, National Health Policy 1983, National Population Policy 2000, National Health Policy 2002, National Health policy 2017, National Nutrition Policy, National Policy on Older Persons, Social Security for Elderly, Legislations to protect Elderly in India, Protect National Youth Policy, National Policy on HIV/AIDS, National Environment Policy etc., its Purpose, Goals & Objectives, Thematic areas and Strategies.

Population and Policies on special groups, Ageing and Disabilities, Ageing and Quality of Life, Ageing and Mental Health problems, Social Gradients of health for Ageing Population, Healthy Ageing, WHO Frame Work for Healthy Ageing. Geriatric care in India

Role of NITI Ayog in Health and Population related policies and programme

Population, Health and related Policies and Programme at State levels.

Evolution of Family Welfare Programme in India since 1952, Population control strategies under different Five Year Plans till current period.

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Recommendations of various Experts Committee viz., Bhore Committee, M**udaliar** Committee, Chadha Committee, Mukherjee Committee, Jungalwalla Committee, Kartar Singh Committee, Shrivastav Committee, Bajaj Committee etc.

National Heath Mission (NHM): History and Evolution, various schemes under NHM: Reproductive, Maternal, Newborn, Child Health and Adolescent (RMNCHA) Programme etc.

Policies, Programmes and Legislations in India: related to Age at Marriage, Medical Termination of Pregnancy, Sex Selected Abortion (PCPNDT Act), COTPA Act-2003 (Tobacco Control Act), Policies and Programme related to Reproductive and Child Health. Adolescent Health, Child Health, Ante Natal, Natal and Post Natal Care, Immunization, Vitamin Deficiency, Diarrhoea and Acute Respiratory Infection, Family Planning, RTIs/STDs; HIV/AIDS, Public Health Nutrition; Causes of Infertility and its Treatment in government programme, Social and Psychological consequences of Infertility, Socio-Psychological and Health problems of menopausal women.

Family Planning Methods-Traditional vs Modern Methods, Advantages/Disadvantages, Effectiveness of various methods,

Achievements of various components of RMNCH+A Programme

National Programme for Health care of Elderly, Communicable and Non Communicable Diseases, programme.

Methods and approaches of impact assessment of different policies and programme on Population and Health of people.

Health Infrastructure and Delivery System in India: Health System functioning in India, Organizational Structure- Sub Heath Center, Primary Health Center, Community Health Center, Health System of District ,State and Center levels, Role and Responsibilities of various categories of health personnel in Family Welfare Programme, Concept and Implementation of Universal Health Care in India.

Decentralization Strategies in Health, Role of Panchayati Raj Institutions (PRIs) in Health, Health Systems Reforms in India, Public-Private Partnership in Health and Family Welfare services, Role of ICDS in reducing malnutrition and coordination with health sectors, Inter-sectoral Coordination for improving hygiene, water and Sanitation etc .

Basic Concepts in Public Financing in Health: equity, efficiency and effectiveness of health care delivery, **b**asic concept of investment in health, public goods and private goods, externalities, public sector spending on health, Basic Concepts in National Health Accounting, Need & Concepts in Social Health Insurance, Schemes in Social Health Schemes, principles and methods of economic evaluation of population & health programmes.

Global Issues and Challenges in Population and Health: Concept of global health, global demographic, health and epidemiological Transition, Role of United Nations and Other International Agencies like UNFPA, Population Council,WHO etc in Health and Population; UN World Population Conferences: Bucharest (1974), Mexico (1984), Cairo (1994) Conferences, Alma Ata Declaration (1978)-Health for all by 2000, Components of Primary Health Care, Millennium Development Goals (2000), Sustainable Development Goals (2016). Health Policies and Health System in developed and developing countries.

Unit 10 - Research Methodology and Programme Evaluation

Principle and methods of Social Science Research,

Scientific Research-conceptual, empirical and analytical framework of research,

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Types of Research: action research, operations research, formative research, programme evaluation research

Research Design: Observational Study (Descriptive and Exploratory Study) and Experimental Studies (Quasi Experimental and True Experimental Study, Longitudinal and Panel Study Design, Issues relates to reliability and validity in research design.

Method of Data Collection and Analysis: Quantitative and Qualitative methods of data collection, quality of data in evaluation research. concept and application of odds ratio and relative risks, concept and application of probability in analysis of population data, laws of probability and concept of Baye's Theorem, Concept and application of Binomial, Exponential and Normal Distributions in population data analysis. concept of statistical hypothesis, concept and application of correlation, association and regression, concept of p-value (level of significance),concept of confidence interval, concept and application of logistics regression analysis.

Sampling: Sampling concept, concept of sampling unit, sampling frame and sampling design, sampling and non-sampling errors, standard error, sample size determination

Sampling Methods and Techniques: Simple random sampling, stratified random sampling, systematic random sampling, cluster sampling, purposive sampling, multi-stage sampling, Design effect in sampling.

Research Problem and Formulation of Research Hypotheses: defining the research problem; components of the research problem; Formulating the research hypothesis.

Research Report Writing and Ethics in Research: Types of research reports – Brief reports and Detailed reports; Report writing: Structure of the research report, Interpretations of Results and suggested recommendations;

Ethics in Research; Client's Ethical code; Researcher's Ethical code; Ethical Codes related to respondents;

Monitoring and Evaluation of Programme: Basic concept of monitoring and evaluation, difference between monitoring and evaluation, monitoring of health Programme:- data requirements and Indicators, Health Management Information System (HMIS) as tool of programme monitoring, Indicators based on service statistics based on:- Input, Process, Output; acceptance/utilization rate of various services, strength and limitations of HMIS data, Evaluation of accessibility, availability, equity, quality and gender perspectives in RMNCH+A Services.

Types of Evaluation-Formative and summative evaluation, concurrent evaluation, Framework for the evaluation of the programme, Types and levels of indicators in programme evaluation- (Input process, output, outcome, and impact indicators), role of service statistics and surveys in programme evaluation.

Concepts and applications of GIS in Population Studies

Spatial Concepts: Spatial parameters- site and location, scale, plane and spherical coordinate; Map projections, types of maps, digital representations of spatial and non spatial data.

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Introduction to GIS: Types of data, discrete and continuous data, raster and vector data, Geo-referencing/Geo-coding and basics of digitization, layouts preparation.

Spatial Data Representations and Analysis: Bar and line diagram, frequency polygon, frequency curve; spatial uni-variate and multivariate statistics: spatial correlation and regression, Matrix algebra; auto-correlation; spatial interpolations, kriging, Moran's I index.

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CHAPTER 01

Introduction and Sources of Population Data

1. Which of the following best defines the scope of Population Studies?
(A) The study of human populations, focusing primarily on statistical birth rates and death rates over time.
(B) The scientific study of human populations, including their size, structure, distribution, and the processes that change them.
(C) The systematic analysis of population data derived from national censuses specifically for economic planning.
(D) The historical account of population growth without considering its complex social and economic implications.

2. The relationship between Population Studies and Sociology is best described as:
(A) Population Studies provides the demographic context for sociological analysis of social structures and institutions.
(B) Population Studies functions as a specialized sub-field of economics, with no established connection to sociology.
(C) Sociology is exclusively concerned with cultural norms, while population studies focuses strictly on statistics.
(D) Population Studies and Sociology represent essentially identical fields of study that operate under different names.

3. Which of the following is considered a primary component of population change?
(A) Urbanization
(B) Literacy Rate
(C) Mortality
(D) Social Mobility

4. From a demographic perspective, what is the primary role of the social institution of 'marriage'?
(A) It primarily serves as a centralized economic unit utilized for long-term wealth accumulation.
(B) It acts as a standardized legal framework for the management of property and inheritance.
(C) It is defined as a religious sacrament that lacks significant relevance to demographic data.
(D) It provides the socially legitimate context for reproduction and family formation.

5. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): The Sample Registration System (SRS) provides more reliable estimates of vital rates for India than the Civil Registration System (CRS).
Reason (R): The SRS is based on a dual-record system which minimizes the omission of vital events, a common problem in the CRS.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

6. Which of the following is an example of a 'social-psychological concept' relevant to population studies?
(A) The crude birth rate of a country.
(B) Attitudes towards contraceptive use.
(C) The total count of migrants in a city.
(D) The age-sex pyramid structure.

Identify the incorrect statement regarding the Indian Census.
(A) The first synchronous census in India was conducted in 1881.

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(B) The census provides data on a wide range of social and economic characteristics.
(C) The census is a primary source of data for understanding population size and structure.
(D) The census in India is conducted on a de facto basis only.

8. Match List I with List II.
List I: (Survey)
P. World Fertility Survey (WFS)
Q. Demographic Health Surveys (DHS)
R. National Sample Surveys (NSS)
S. Aging Survey
List II: (Primary Focus)
1. Socio-economic data and consumer expenditure
2. Health and well-being of the elderly population
3. Pioneering international survey on human fertility
4. Health, nutrition, and population indicators in developing countries
Codes:
(A) P-3, Q-4, R-1, S-2
(B) P-4, Q-3, R-2, S-1
(C) P-1, Q-2, R-3, S-4
(D) P-3, Q-1, R-4, S-2

9. The term 'demographic profile' of a state most accurately refers to:
(A) The political history and electoral results of the state.
(B) The geographical and topographical features of the state.
(C) The statistical portrait of the population including age, sex, literacy, and density.
(D) The total budget and economic output of the state.

10. Which index is specifically designed to measure the preference for terminal digits 0 and 5 in age reporting?
(A) Whipple's Index
(B) Myer's Index
(C) United Nations Age-Sex Accuracy Index
(D) Chandrasekaran-Deming Index

11. Consider the following statements about the Civil Registration System (CRS) in India:
1. It is mandated by the Registration of Births and Deaths Act, 1969.
2. It has achieved 100% coverage and completeness across all states.
3. It provides a continuous and permanent record of vital events.
4. Its primary weakness is the significant under-registration of events.
Which of the above statement(s) is/are correct?
(A) 1, 2 and 3
(B) 1, 3 and 4
(C) 2, 3 and 4
(D) 1, 2 and 4

12. In the context of communication processes relevant to population studies, 'channel' refers to:
(A) The content of the message being conveyed.
(B) The medium through which the message travels from sender to receiver.
(C) The person or organization sending the message.
(D) The person for whom the message is intended.

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13. Given below are two statements:
Statement I: Social change in India, such as increasing female education, has a significant impact on fertility rates.
Statement II: Social change operates independently of demographic processes and has no influence on population dynamics.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct but Statement II is incorrect.
(D) Statement I is incorrect but Statement II is correct.

14. Arrange the following major population data collection efforts in India in chronological order of their initiation:
1. National Sample Surveys (NSS)
2. First Synchronous All-India Census
3. Sample Registration System (SRS)
4. National Family Health Surveys (NFHS)
Which of the following represents the correct sequence?
(A) 2, 1, 3, 4

(B) 1, 2, 3, 4
(C) 2, 3, 1, 4
(D) 4, 3, 1, 2

15. What is the fundamental assumption of the Chandrasekaran-Deming formula?
(A) The two sources of data collection are statistically independent.
(B) The two sources of data collection are completely dependent on each other.
(C) The population is closed to migration during the survey period.
(D) The age reporting in both sources is perfectly accurate.

16. The study of tribes in India is relevant to population studies primarily because:
(A) Tribal populations represent the historical majority of the current Indian population.
(B) They often exhibit unique demographic characteristics and cultural practices influencing them.
(C) They are the primary groups experiencing a steady and significant population decline.
(D) Tribal cultures are entirely identical to the mainstream cultural practices in urban areas.

17. Consider the following characteristics regarding the Indian census:
1. It is conducted decennially.
2. It aims for universal coverage of the entire population.
3. It gathers data on individual characteristics at a specific point in time.
4. It is organized and conducted by the World Health Organization.
5. It follows a method known as the 'Houselisting and Housing Census' followed by 'Population Enumeration'.

Which of the above statement(s) is/are correct?
(A) 1, 2, 3, and 4
(B) 2, 3, 4, and 5
(C) 1, 2, 3, and 5
(D) 1, 3, 4, and 5

18. 'Age heaping' in population data is a type of:
(A) Content error
(B) Coverage error
(C) Sampling error
(D) Processing error

19. Which of the following is NOT a primary source of population data?
(A) The decennial population census.
(B) The Civil Registration System.
(C) A research paper analyzing census data.
(D) A Demographic Health Survey.

20. The 'nature' of Population Studies is best described as:
(A) Purely historical
(B) Exclusively mathematical
(C) Singularly biological
(D) Multi-disciplinary

21. Myer's Index is used to evaluate the quality of which type of data?
(A) Marriage data
(B) Migration data
(C) Age data
(D) Mortality data

22. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): Social institutions like family and religion play a crucial role in shaping population trends.
Reason (R): These institutions influence norms and behaviors related to marriage, fertility, and health-seeking practices.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

23. The 'history of population in India' is characterized by:
(A) A consistent and steady decline over the centuries.
(B) A period of slow growth followed by a phase of rapid acceleration.
(C) A population that has remained static until the 21st century.
(D) A history of zero population growth.

24. A key limitation of the Civil Registration System (CRS) in India is:
(A) Incomplete coverage and under-registration

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(B) High cost of data collection
(C) Lack of legal backing
(D) It only collects data every ten years

25. Match List I with List II.
List I: (Concept)
P. Society
Q. Culture
R. Social Structure
S. Kinship
List II: (Description)
1. The patterned social arrangements in society
2. A web of social relationships based on blood or marriage
3. An organized group of persons associated together for a common purpose
4. The shared values, beliefs, behaviors, and artifacts of a group
Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-4, R-1, S-2
(C) P-2, Q-1, R-4, S-3
(D) P-3, Q-1, R-2, S-4

26. Which of the following is an example of a 'racial group' in the context of population classification?
(A) A group of people distinguished by shared physical or hereditary traits.
(B) A group of people sharing the same nationality.
(C) A group of people with a shared language.
(D) A group of people belonging to the same economic class.

27. The World Fertility Survey (WFS) was significant because it:
(A) Represented the first survey to focus specifically on aging populations at a global scale.
(B) Was implemented through annual data collection cycles in every sovereign country worldwide.
(C) Concentrated exclusively on mortality trends while excluding all indicators related to fertility.
(D) Was the first large-scale, internationally comparable survey of fertility in developing countries.

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28. Consider the following statements regarding the scope of population data sources:
1. Population censuses provide a complete count at a single point in time.
2. Vital registration systems aim to record events as they occur.
3. Population surveys collect data from a representative sample of the population.
4. Population surveys are always less accurate than a full census for any purpose.
Which of the above statement(s) is/are correct?
(A) 1, 2 and 4
(B) 2, 3 and 4
(C) 1, 2 and 3
(D) 1, 3 and 4

29. 'Smoothing of age data' is a statistical procedure undertaken to:
(A) Introduce artificial errors into the data for testing purposes.
(B) Increase the total population count to match projections.
(C) Adjust for the effects of age heaping and misreporting.
(D) Calculate the exact number of births and deaths.

30. Given below are two statements:
Statement I: The United Nations Age-Sex Accuracy Index combines measures of age ratios and sex ratios to assess data quality.
Statement II: A lower value of the UN Age-Sex Accuracy Index indicates a higher quality of age-sex data.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct but Statement II is incorrect.
(D) Statement I is incorrect but Statement II is correct.

31. Which of the following sources is designed to provide annual estimates of fertility and mortality rates at the national and state level in India?
(A) Sample Registration System (SRS)
(B) Population Census
(C) National Sample Survey (NSS)

(D) Civil Registration System (CRS)

32. Which of the following best exemplifies the role of culture in population studies?
(A) The quantitative assessment of the total number of hospitals in a rural region.
(B) The preference for sons, which can affect sex ratios and fertility behavior.
(C) The calculation of the gross domestic product of a specific sovereign nation.
(D) The analysis of the physical geographical distribution of a localized population.

33. Which of the following surveys in India is most analogous to the international Demographic Health Surveys (DHS)?
(A) National Sample Surveys (NSS)
(B) National Family Health Surveys (NFHS)
(C) Sample Registration System (SRS)
(D) Aging Survey of India

34. A major strength of population census data is its:
(A) Complete geographical coverage of the country.
(B) Timeliness, with data being available within months of collection.
(C) Low cost of collection and processing.
(D) Freedom from all forms of data errors.

35. The concept of 'social change' in India, relevant to demography, includes all the following EXCEPT:
(A) Rising levels of urbanization
(B) Increasing age at marriage
(C) A static and unchanging caste system
(D) Improvements in female literacy

36. Which of the following is a key feature of the Sample Registration System (SRS) in India?
(A) It relies solely on verbal information provided by the head of the selected household.
(B) It involves a one-time survey conducted at ten-year intervals to match the census cycle.
(C) It prioritizes the registration of vital events exclusively within designated urban areas.
(D) It uses a dual-record system of continuous enumeration and a retrospective survey.

37. The historical background of the Indian census shows that the first complete and synchronous census was conducted in the year:
(A) 1872
(B) 1901
(C) 1881
(D) 1951

38. The Chandrasekaran-Deming formula is a tool for:
(A) Smoothing age distributions.
(B) Estimating the completeness of event registration.
(C) Calculating the sex ratio at birth.
(D) Projecting future population size.

39. The relationship between Population Studies and other social sciences is primarily one of:
(A) Isolation and independence.
(B) Subordination, where population studies is always a minor part.
(C) Competition for the same research funding.
(D) Interdependence and mutual enrichment.

40. Identify the correct pair from the following:
(A) Myer's Index - Measures preference for all terminal digits
(B) Whipple's Index - Measures completeness of death registration
(C) UN Index - Measures only the accuracy of female age reporting
(D) Chandrasekaran-Deming - Measures age heaping

41. Consider the following:
1. Fertility
2. Social mobility
3. Mortality
4. Migration
5. Education Level

Which of the above are considered components of population change?
(A) 1, 2, and 3
(B) 1, 3, and 4
(C) 2, 4, and 5
(D) 1, 3, and 5

42. The main purpose of an 'Aging Survey' is to collect data on:
(A) The health, social, and economic conditions of the elderly.

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(B) The fertility patterns of the entire population.
(C) The nutritional status of children under five.
(D) The migration patterns of young adults.

43. Which of the following correctly describes a limitation of population surveys?
(A) They provide less detailed information than a census.
(B) They are subject to sampling errors.
(C) They are more expensive to conduct than a full census.
(D) They cannot be used to study changes over time.

44. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): Myer's Index is a more refined tool for measuring age heaping than Whipple's Index.
Reason (R): Myer's Index examines the preference for all ten terminal digits (0-9), while Whipple's Index only focuses on digits 0 and 5.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

45. The 'definition and scope' of a population census implies that it should be:
(A) Conducted on a sample basis to save costs.
(B) Focused only on the economically active population.
(C) Universal, simultaneous, and have a defined periodicity.
(D) A voluntary exercise for citizens.

46. In the context of communication processes related to population studies, "feedback" is crucial for:
(A) Ensuring the message is only delivered one-way.
(B) Reducing the initial message sent by the source.
(C) Increasing the noise in the communication channel.
(D) Assessing the receiver's understanding and reaction to the message.

47. Match List I with List II.
List I: (Data Error Concept)
P. Age Heaping
Q. Coverage Error
R. Content Error
S. Sampling Error
List II: (Example)
1. An entire household is missed during census enumeration.
2. A respondent reports her age as 40 when she is actually 42.
3. An unusually high number of people report their age ending in 0 or 5.
4. A survey estimate differs from the true population value due to chance.
Codes:
(A) P-1, Q-2, R-4, S-3
(B) P-3, Q-1, R-2, S-4
(C) P-3, Q-2, R-1, S-4
(D) P-4, Q-1, R-2, S-3

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48. Given below are two statements:
Statement I: The Reproductive and Child Health Survey (RCHS) was a key source of data for monitoring the RCH program in India.
Statement II: The RCHS was later integrated into the broader National Family Health Survey (NFHS).
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct but Statement II is incorrect.
(D) Statement I is incorrect but Statement II is correct.

49. Which of the following is NOT a primary source of population data?
(A) The decennial population census.
(B) Political Parties.
(C) The Civil Registration System.
(D) A Demographic Health Survey.

50. The 'current population scenario' of India is characterized by:
(A) A declining but still significant population

growth rate.
(B) A very young age structure with a large proportion of children.
(C) The world's largest total population size.
(D) A higher death rate than birth rate.

51. What does the United Nations Age-Sex Accuracy Index measure?
(A) The accuracy of birth and death registration.
(B) The verification of the total population count in urban areas.
(C) The consistency of age and sex data from a census or survey.
(D) The level of preference for sons in a society.

52. The National Sample Surveys (NSS) in India are primarily known for collecting data on:
(A) Standard demographic parameters such as crude birth and death rates.
(B) Public political opinions and specific household voting behavior.
(C) The health status of the population, excluding all socio-economic topics.
(D) A wide range of socio-economic subjects, including employment and consumer expenditure.

53. Arrange the following surveys in the order of their general historical emergence, from earliest to latest:
1. Demographic Health Surveys (DHS)
2. World Fertility Survey (WFS)
3. National Family Health Surveys (NFHS) in India
4. Reproductive and Child Health Survey (RCHS) in India

Which of the following represents the correct sequence?
(A) 2, 1, 4, 3
(B) 1, 2, 3, 4
(C) 2, 4, 1, 3
(D) 4, 2, 1, 3

54. "A large collection of people with a common territory, interaction, and culture" is a basic definition of:
(A) A racial group
(B) A society
(C) A kinship system
(D) A family

55. Identify the incorrect statement about data appraisal.
(A) Data appraisal is necessary because no demographic data is perfectly accurate.
(B) Myer's Index can be used to assess the quality of single-year age data.
(C) Errors in population data can arise from the respondent, the enumerator, or the processing stage.
(D) Whipple's index is a method for evaluating coverage error.

56. Consider the following characteristics regarding a Population Census:
1. Universality within a defined territory.
2. Individual enumeration.
3. Simultaneity or a well-defined time reference.
4. It should be based on a small sample of the population.
5. It should have a defined periodicity.

Which of the above statement(s) is/are correct?
(A) 1, 2, 3, and 4
(B) 2, 3, 4, and 5
(C) 1, 2, 3, and 5
(D) 1, 3, 4, and 5

57. Consider the following demographic scenario:
A demographer finds that in a recent survey of a rural district, the number of people reporting their age as 50 is significantly higher than those reporting 49 or 51. This phenomenon is known as:
(A) Population momentum
(B) Natural increase
(C) Age heaping
(D) Coverage error

58. One of the main advantages of the Sample Registration System (SRS) over the census is its:
(A) Ability to provide data on a continuous basis, yielding annual estimates.
(B) Complete coverage of every individual in the country.
(C) Lower susceptibility to any form of data error.
(D) Focus on collecting detailed data on economic production.

59. The study of 'social structure' is important for population studies because:
(A) It has no relationship with demographic

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outcomes.
(B) Social structure only refers to the physical infrastructure of a country.
(C) It is a concept used exclusively in anthropology.
(D) Hierarchies and social stratification can influence access to resources, health, and mortality.

60. Identify the incorrect statement from the following:
(A) NFHS - Provides data on fertility, mortality, and health in India
(B) CRS - A survey conducted on a sample of the population
(C) SRS - Provides annual estimates of vital rates
(D) Census - A complete enumeration conducted decennially

61. The global variation in population size and growth shows that:
(A) All countries are currently experiencing rapid population growth.
(B) Developed countries have higher population growth rates than developing countries.
(C) Developing countries generally have higher population growth rates than developed countries.
(D) Population growth has ceased globally.

62. In the context of data appraisal, what does a Whipple's Index value close to 100 indicate?
(A) Extreme age heaping on digits 0 and 5.
(B) A significant undercount of the population in the census.
(C) A high degree of accuracy in death registration.
(D) A very high quality of age data with no preference for specific digits.

63. The transition from the Reproductive and Child Health Survey (RCHS) to the National Family Health Surveys (NFHS) represents a shift towards:
(A) A more integrated and broader approach to collecting health and demographic data.
(B) A less comprehensive survey model utilizing a restricted set of technical questions.
(C) Focusing solely on child health while deliberately ignoring reproductive health factors.
(D) A survey conducted by international agencies without direct local involvement.

64. Consider the following statements about sources of population data:
1. Censuses are prone to coverage and content errors.
2. The main problem with India's CRS is under-registration.
3. Surveys like NFHS are not subject to any errors because they are scientific.
4. SRS is a dual-record system designed to improve vital statistics.

Which of the above statement(s) is/are correct?
(A) 1, 2 and 3
(B) 2, 3 and 4
(C) 1, 3 and 4
(D) 1, 2 and 4

65. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): Kinship systems can influence demographic behavior.
Reason (R): Rules of lineage and residence after marriage (e.g., patrilocal) can affect the status of women and family size decisions.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

66. The Comprehensive Nutrition Survey is distinct from other surveys like NFHS because its primary focus is on:
(A) The detailed nutritional status and biomarkers of children and adolescents.
(B) Fertility preferences.
(C) The economic condition of households.
(D) The migration history of the population.

67. Given below are two statements:
Statement I: Population studies is a descriptive discipline that only presents facts and figures.
Statement II: Population studies is an analytical discipline that seeks to understand the causes and consequences of population phenomena.

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Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is incorrect but Statement II is correct.
(D) Statement I is correct but Statement II is incorrect.

68. Match List I with List II.
List I: (Data Source)
P. Indian Census
Q. Sample Registration System (SRS)
R. Civil Registration System (CRS)
S. National Family Health Survey (NFHS)
List II: (Key Feature)
1. Continuous and compulsory recording of births and deaths
2. Representative sample survey on health and family welfare
3. Dual record system for vital rates estimation
4. Complete enumeration of the population at a point in time
Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-3, R-2, S-1
(C) P-4, Q-3, R-1, S-2
(D) P-2, Q-1, R-4, S-3

69. Which of the following is an example of applying a social-psychological concept to population studies?
(A) Calculating the statistical population density of a designated metropolitan city.
(B) Counting the total number of established government schools in a rural district.
(C) Measuring the prevalence of a belief that having many children ensures old-age security.
(D) Recording the official language spoken by the majority of citizens in a country.

70. The historical background of vital statistics collection began with:
(A) The invention of computers in the 20th century.
(B) Church records of baptisms, marriages, and burials in Europe.
(C) The first Indian census in 1872.
(D) The establishment of the World Health Organization.

71. Which of the following is NOT a use of population census data?
(A) Delimitation of electoral constituencies.
(B) Monitoring local weather patterns for agricultural planning.
(C) Formulation of policies for social and economic development.
(D) Providing daily updates on the stock market.

72. A key problem associated with the Civil Registration System (CRS) in India is the:
(A) Inconsistent and incomplete reporting of vital events.
(B) Lack of a legal framework.
(C) High degree of centralization with no state involvement.
(D) Fact that it only registers marriages and not births or deaths.

73. The 'components of population change' refer to the three basic processes that alter the size of a population. These are:
(A) Education, Income, and Occupation
(B) Urbanization, Industrialization, and Modernization
(C) Births, Deaths, and Migration
(D) Census, Surveys, and Vital Registration

74. Myer's Index and Whipple's Index are both techniques for:
(A) Evaluating the extent of age misreporting.
(B) Adjusting for under-enumeration in a census.
(C) Calculating life expectancy.
(D) Projecting future fertility rates.

75. Arrange the following stages of the Indian census in their correct chronological sequence:
1. Data processing and dissemination
2. Population enumeration
3. Planning and preparatory work
4. Houselisting and Housing Census
Which of the following represents the correct sequence?
(A) 3, 4, 2, 1
(B) 1, 2, 3, 4
(C) 3, 2, 4, 1
(D) 4, 3, 2, 1

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76. The relationship of 'religion' to population studies is most evident in its influence on:
(A) The methods of census data collection.
(B) Attitudes towards family size, contraception, and abortion.
(C) The calculation of the UN Age-Sex Accuracy Index.
(D) The geographical boundaries of a nation.

77. Which statement correctly identifies a weakness of a population census?
(A) It provides data that is too specific and detailed.
(B) It covers only a small, unrepresentative part of the population.
(C) It is a very expensive and time-consuming exercise.
(D) The data becomes available immediately after collection.

78. Which of the following surveys provides the most comprehensive data on maternal and child health, fertility, and family planning for a wide range of developing countries under a standardized methodology?
(A) National Sample Surveys (NSS)
(B) Aging Survey
(C) World Fertility Survey (WFS)
(D) Demographic Health Surveys (DHS)

79. Consider the following statements about the sources and appraisal of population data:
1. The Chandrasekaran-Deming formula requires two independent sources to estimate event completeness.
2. Myer's Index is superior to Whipple's as it considers digit preference for all ten terminal digits.
3. The UN Age-Sex Accuracy Index combines measures of age ratios and sex ratios.
4. Smoothing of age data is done to correct for errors like age heaping.
5. A primary advantage of the SRS is its reliance on a single, flawless reporting system.

Which of the above statement(s) is/are correct?
(A) 1, 2, 3, and 4
(B) 2, 3, 4, and 5
(C) 1, 3, 4, and 5
(D) 1, 2, 4, and 5

80. "The study of population trends and global variation in population size and growth" falls under which major area of Population Studies?
(A) Data appraisal techniques
(B) Substantive demography
(C) Sources of population data
(D) Social psychological concepts

81. A society's 'kinship' system, which defines family relationships and obligations, directly influences:
(A) The statistical growth of the national GDP.
(B) Inheritance patterns, marriage rules, and household structure.
(C) The specific type of physical currency used.
(D) The formulation of international trade policies.

82. In the context of census taking, a 'coverage error' refers to:
(A) The failure to include all individuals or households in the enumeration, or counting them more than once.
(B) The failure to correctly record an individual's characteristics like age or occupation.
(C) An error made during data entry and tabulation.
(D) A spelling mistake in the respondent's name.

83. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): Communication processes are highly relevant in the context of population studies.
Reason (R): Effective communication is essential for the success of family planning programs, health campaigns, and for disseminating demographic information.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

84. The primary limitation of using National Sample Surveys (NSS) data for demographic estimation is that:

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(A) The surveys are not conducted regularly.
(B) The sample size is too small to be meaningful.
(C) The data is never made public.
(D) Its primary focus is usually on socio-economic indicators, not core demography.

85. Given below are two statements:
Statement I: The Indian census attempts to collect data on a de jure basis by counting people at their usual place of residence.
Statement II: The Indian census also has provisions to count the houseless population, incorporating elements of a de facto count.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct but Statement II is incorrect.
(D) Statement I is incorrect but Statement II is correct.

86. Match List I with List II.
List I: (Index/Formula)
P. Whipple's Index
Q. Myer's Index
R. UN Age-Sex Accuracy Index
S. Chandrasekaran-Deming Formula
List II: (Purpose)
1. Overall assessment of age-sex data quality
2. Measurement of completeness of vital registration
3. Measurement of age heaping on terminal digits 0-9
4. Measurement of age heaping on terminal digits 0 and 5
Codes:
(A) P-4, Q-3, R-1, S-2
(B) P-3, Q-4, R-2, S-1
(C) P-4, Q-1, R-3, S-2
(D) P-2, Q-3, R-1, S-4

87. The study of tribes in India from a demographic perspective often reveals:
(A) Identical demographic profiles across all tribal groups.
(B) Lower levels of infant mortality than urban populations.
(C) A complete absence of traditional cultural practices.
(D) Higher fertility and mortality rates compared to the national average.

88. What is the most significant advantage of a survey like NFHS over census data for health researchers?
(A) NFHS provides more in-depth and specialized information on health topics.
(B) NFHS covers every single person living in India.
(C) NFHS data is entirely free from any form of error.
(D) NFHS is conducted consistently every calendar year.

89. A "content error" in a census refers to:
(A) Missing a household during enumeration.
(B) Counting a person twice.
(C) Incorrectly recording a person's age, marital status, or occupation.
(D) A printing mistake in the final census report.

90. The term 'Social Groups' in the context of population studies refers to:
(A) Aggregates of people with shared characteristics, such as caste, class, or ethnicity, which can influence demographic behavior.
(B) Specific groups defined exclusively by their age and biological sex.
(C) The designated team of official enumerators conducting a census.
(D) People living in the same region, regardless of social characteristics.

91. The historical growth of the Indian population can be broadly divided into periods of:
(A) Continuous decline until independence and rapid growth after.
(B) Rapid growth before 1921 and stagnant growth after.
(C) A constant growth rate throughout history.
(D) Stagnant growth, steady growth, and rapid high growth.

92. The relationship between Population Studies and Psychology is primarily seen in the study of:
(A) The formulation of national economic policies.
(B) Individual attitudes, motivations, and

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decision-making processes related to fertility and migration.
(C) The formal legal framework of a sovereign country.
(D) Historical population trends of ancient civilizations.

93. The 'smoothing of age data' would be most necessary for a dataset that shows:
(A) A perfectly even distribution of population across all ages.
(B) A higher number of females than males.
(C) Large spikes in population counts at ages ending in 0 and 5.
(D) A consistently declining number of people at older ages.

94. Consider the following features or uses of the Indian Census:
1. It is a major source for understanding the demographic profile of the country.
2. It serves as a frame for conducting other sample surveys.
3. The data is used for the delimitation of constituencies.
4. It provides annual estimates of birth and death rates.

Which of the above statement(s) is/are correct?
(A) 1, 2 and 3
(B) 2, 3 and 4
(C) 1, 3 and 4
(D) 1, 2 and 4

95. In population studies, 'culture' is understood as a key determinant of demographic behavior because:
(A) It provides the system of shared meanings, values, and norms that guide people's lives.
(B) It represents a biological trait passed down through genetic inheritance.
(C) It is largely irrelevant to how people make decisions about families.
(D) It is only studied by historians and lacks contemporary relevance.

96. Given below are two statements:
Statement I: The Demographic Health Surveys (DHS) program is funded and managed exclusively by the Indian government.
Statement II: The National Family Health Survey (NFHS) is the Indian version of the DHS, adapted to the Indian context.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is incorrect but Statement II is correct.
(D) Statement I is correct but Statement II is incorrect.

97. Consider the following phenomena related to social change in India:
1. The shift from joint to nuclear family systems.
2. Increasing female literacy and labor force participation.
3. The persistence of traditional religious beliefs.
4. Technological advancements in agriculture.
5. A stagnant, unchanging political landscape.

Which of the above are considered relevant to population studies?
(A) 1, 2, 3, and 4
(B) 1, 2, 4, and 5
(C) 2, 3, 4, and 5
(D) 1, 2, 3, and 5

98. An advantage of the Sample Registration System (SRS) is that it provides:
(A) More reliable and timely vital rates than the CRS.
(B) A full count of the entire population.
(C) Detailed data on economic and social issues like the NSS.
(D) A complete list of all households for election purposes.

99. The "history and definition of Population Studies" shows that the field has evolved from:
(A) A broad social science to a narrow focus on biological reproduction.
(B) A sub-discipline of geography to a sub-discipline of medicine.
(C) A narrow focus on political arithmetic to a broad multi-disciplinary science.
(D) An ancient philosophy to a modern form of journalism.

100. A key assumption for the United Nations Age-Sex Accuracy Index to be effective is that:

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(A) There has been no significant migration into or out of the population.
(B) Mortality rates are identical for males and females at all ages.
(C) The population size is constant over time.
(D) Age ratios and sex ratios should change smoothly and regularly from one age group to the next.

101. Arrange the following sources of population data in order of their typical frequency, from most frequent to least frequent:
1. Population Census
2. Civil Registration System (CRS)
3. National Family Health Survey (NFHS)

Which of the following represents the correct sequence?
(A) 1, 3, 2
(B) 2, 3, 1
(C) 3, 2, 1
(D) 2, 1, 3

102. The role of 'family' as a social institution in population studies is critical because it is the primary unit for:
(A) Direct political mobilization efforts.
(B) Reproduction, socialization, and consumption.
(C) Aggregate national economic production.
(D) Facilitating international diplomacy.

103. 'Types and sources of errors in population data' can be broadly categorized as:
(A) Intentional errors and unintentional errors.
(B) Urban errors and rural errors.
(C) Historical errors and modern errors.
(D) Coverage errors and content errors.

104. Which of the following indices would be the MOST appropriate tool to use to check for digit preference in a new dataset?
(A) Myer's Blended Index
(B) Human Development Index
(C) Gini Coefficient
(D) Consumer Price Index

105. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): The history of population in India is marked by a clear demographic divide around the year 1921.
Reason (R): Before 1921, the population growth was stagnant and fluctuating due to high birth and death rates, whereas after 1921, death rates began a definitive decline leading to sustained population growth.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

106. Given below are two statements:
Statement I: The primary scope of the Reproductive and Child Health Survey (RCHS) was to evaluate agricultural policies.
Statement II: The RCHS was designed to monitor the performance of the Reproductive and Child Health program.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is incorrect but Statement II is correct.
(D) Statement I is correct but Statement II is incorrect.

107. Given below are two statements:
Statement I: 'Social structure' refers to the enduring patterns of social relationships and institutions within a society.
Statement II: In population studies, social structure is relevant as it can create differential access to resources that affect health and mortality.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct but Statement II is incorrect.
(D) Statement I is incorrect but Statement II is correct.

108. Match List I with List II.
List I: (Term)

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P. De jure census
Q. De facto census
R. Periodicity
S. Universality

List II: (Associated Concept)

1. Counting people where they are found on census night
2. The principle of including every person in the country
3. Counting people at their usual place of residence
4. The census being taken at regular time intervals

Codes:
(A) P-1, Q-3, R-2, S-4
(B) P-3, Q-1, R-4, S-2
(C) P-2, Q-4, R-1, S-3
(D) P-3, Q-2, R-4, S-1

109. What is the fundamental difference between vital statistics and a census?
(A) Vital statistics are a sample, while a census is a complete count.
(B) Vital statistics are collected every year, while a census is collected every month.
(C) Vital statistics record dynamic events (flows), while a census records static characteristics (stock).
(D) Vital statistics are perfectly accurate, while a census contains errors.

110. One of the major uses of census data is to provide a sampling frame. What does this mean?
(A) The census is used to frame laws about sampling.
(B) The census questionnaire is used as a frame for survey design.
(C) The census results are framed and displayed in government offices.
(D) The census list of households and areas is used to draw representative samples for other surveys.

111. Consider the following:
1. Population density
2. Population growth rate
3. Age-sex composition
4. Whipple's Index
5. Chandrasekaran-Deming formula

Which of the above are considered basic demographic concepts?
(A) 1, 2, 3, and 4
(B) 2, 3, 4, and 5
(C) 1, 2, and 3
(D) 3, 4, and 5

112. The communication process in population studies can be hampered by 'noise'. Which of the following is an example of 'noise' in a family planning campaign?
(A) A clear and simple message about contraceptive methods.
(B) Prevailing rumors and misinformation about the side effects of contraceptives.
(C) A trusted health worker delivering the message.
(D) A television advertisement broadcast during prime time hours.

113. An application of the Chandrasekaran-Deming formula would be to:
(A) Calculate the exact sex ratio at birth.
(B) Estimate the total number of births in a region using birth records from both a survey and the civil registration system.
(C) Smooth the age distribution of a population.
(D) Predict the future population of a country.

114. A primary reason for the 'global variation in population growth' is the difference between countries in:
(A) Their stage of demographic transition.
(B) Their geographical location on the globe.
(C) The language spoken by their population.
(D) Their form of government.

115. Identify the incorrect statement regarding the major population surveys.
(A) The World Fertility Survey was a pioneer in collecting internationally comparable fertility data.
(B) The Demographic Health Surveys are the successors to the WFS.
(C) The National Sample Surveys in India focus exclusively on demographic topics.
(D) The National Family Health Surveys are India's primary source of data on health and population indicators.

116. "A group of people related by blood, marriage, or adoption" defines which social institution?
(A) Religion

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(B) Kinship
(C) Society
(D) Family

117. Consider the following statements about issues in population data:
1. Age heaping is a form of content error.
2. Under-registration is a major problem for the Civil Registration System in India.
3. Myer's Index is used for measuring preference for terminal digits in age reporting.
4. Data from surveys like the NFHS are completely free from sampling error.

Which of the above statement(s) is/are correct?
(A) 1, 2 and 3
(B) 2, 3 and 4
(C) 1, 3 and 4
(D) 1, 2 and 4

118. The 'historical background' of the Indian census reveals that its primary initial purpose under British rule was:
(A) To provide welfare services to the population.
(B) To facilitate administrative governance and population control.
(C) To study the cultural practices of Indian tribes.
(D) To promote proactive family planning initiatives.

119. Given below are two statements:
Statement I: A limitation of population surveys is that they are subject to sampling error.
Statement II: A strength of population surveys is that they can collect more detailed data on specific topics than a census.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct but Statement II is incorrect.
(D) Statement I is incorrect but Statement II is correct.

120. The current demographic profile of states in India shows:
(A) Significant variations, with southern states generally being further ahead in the demographic transition.
(B) Uniformity in all demographic indicators across all states.
(C) That northern states have lower fertility rates than southern states.
(D) That all states have an identical age-sex structure.

121. The United Nations Age-Sex Accuracy Index is considered 'inaccurate' when its value is:
(A) Less than 20
(B) Between 20 and 40
(C) Greater than 40
(D) Exactly 100

122. Which of the following is NOT a component of the communication process?
(A) Population Density
(B) Sender
(C) Message
(D) Channel

123. The 'adjustment in age data' is performed to:
(A) Artificially increase the population size.
(B) Change the sex ratio of the population.
(C) Make the data more difficult to understand.
(D) Correct for known errors such as age heaping and misstatement.

124. What distinguishes a 'racial group' from a 'social group' in demographic classification?
(A) Social groups are larger than racial groups.
(B) Perceived biological/physical traits, while social groups are based on culture, class, or interest.
(C) There is no difference; the terms are interchangeable.
(D) Racial groups are based on nationality, while social groups are not.

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125. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): Population Studies is considered a science.
Reason (R): It employs scientific methods of inquiry, including observation, hypothesis testing, and quantitative analysis to study population dynamics.
(A) Both A and R are true and R is the correct

explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

126. A demographer is studying the impact of son preference on fertility decisions in a community. This study falls under the intersection of Population Studies and:
(A) Geology
(B) Physics
(C) Computer Science
(D) Social Psychology and Sociology

127. Which of the following sources of population data is a 'flow' data system?
(A) The Civil Registration System (CRS).
(B) The decennial Census.
(C) The National Family Health Survey (NFHS).
(D) An Aging Survey.

128. Match List I with List II.
List I: (Survey Acronym)
P. SRS
Q. NFHS
R. RCHS
S. NSS
List II: (Full Name)
1. National Family Health Survey
2. Reproductive and Child Health Survey
3. National Sample Survey
4. Sample Registration System
Codes:
(A) P-4, Q-1, R-2, S-3
(B) P-3, Q-2, R-1, S-4
(C) P-4, Q-3, R-1, S-2
(D) P-1, Q-4, R-2, S-3

129. If a population census was conducted in 2011, according to the principle of periodicity, when would the next census have been expected in India?
(A) 2016
(B) 2021
(C) 2026
(D) 2031

130. The 'scope' of Population Studies includes the study of all of the following EXCEPT:
(A) The chemical composition of celestial bodies.
(B) Population distribution and density.
(C) The components of population change (fertility, mortality, migration).
(D) The socio-economic consequences of population growth.

131. Which of the following is a key feature of a tribal culture in India that might influence its demography?
(A) High levels of industrial employment.
(B) A strong reliance on modern technology.
(C) Unique marriage customs and kinship structures.
(D) A political system identical to urban centers.

132. Consider the following statements about population data appraisal:
1. Whipple's Index measures age heaping on digits 0 and 5.
2. Myer's Index provides a summary index for digit preference across all digits 0-9.
3. The Chandrasekaran-Deming formula is used for smoothing age data.
4. The UN Age-Sex Accuracy Index is based on analyzing age ratios and sex ratios.
5. Errors in data can originate from the respondent or the enumerator.

Which of the above statement(s) is/are correct?
(A) 1, 2, 3, and 4
(B) 1, 2, 4, and 5
(C) 2, 3, 4, and 5
(D) 1, 3, 4, and 5

133. The history of the Civil Registration System (CRS) in India is older than the Sample Registration System (SRS). Why was the SRS introduced?
(A) To replace the CRS entirely.
(B) To conduct a census every year.
(C) To provide reliable estimates of vital rates due to registration deficiencies.
(D) To collect data on household expenditure.

134. Given below are two statements:
Statement I: The World Fertility Survey (WFS) was conducted in the 1970s and early 1980s.
Statement II: The WFS was a landmark survey because it enabled, for the first time, cross-country comparison of fertility data collected with a standardized methodology.

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Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct but Statement II is incorrect.
(D) Statement I is incorrect but Statement II is correct.

135. The concept of "social change in India" affecting population includes phenomena like increased mobility and urbanization. What is a direct demographic consequence of this?
(A) A decline in the importance of agriculture.
(B) A strengthening of the traditional caste system.
(C) A complete stop to international migration.
(D) A shift in the population distribution from rural to urban areas.

136. Which of the following is the most appropriate description of the 'nature' of population studies?
(A) It is an interdisciplinary field drawing theories and methods from sociology, economics, statistics, and biology.
(B) It is a purely quantitative field with no qualitative aspects.
(C) It is a branch of history focused on counting people in ancient times.
(D) It is an exact science that can predict future population with 100% accuracy.

137. Arrange the following events related to the history of population data collection in India in chronological order:
1. The first synchronous census is conducted.
2. The Registration of Births and Deaths Act is passed.
3. The first National Family Health Survey (NFHS-1) is conducted.
4. The Sample Registration System (SRS) is initiated on a pilot basis.

Which of the following represents the correct sequence?
(A) 1, 4, 2, 3
(B) 1, 2, 4, 3
(C) 2, 1, 4, 3
(D) 4, 1, 2, 3

138. Which of the following is a limitation of using census data for analysis?
(A) There is a significant time lag between data collection and data availability.
(B) It only covers the urban population.
(C) The data is collected for a sample and may not be representative.
(D) It does not collect any information on social characteristics.

139. Myer's Blended Index provides a summary index of preference for terminal digits. An index value of 0 would imply:
(A) Extreme preference for all digits.
(B) All ages were reported ending in 0.
(C) All ages were reported ending in 5.
(D) No preference for any terminal digit over others.

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140. Which source of population data is best suited to provide a detailed snapshot of the entire population's characteristics at a single point in time?
(A) Civil Registration System
(B) Population Census
(C) Sample Registration System
(D) National Sample Survey

141. The influence of 'religion' on population dynamics is most often studied in relation to its impact on:
(A) Statistical age reporting accuracy.
(B) The formal census enumeration process.
(C) Norms regarding marriage, family size, and use of contraception.
(D) The design of the SRS system.

142. The Chandrasekaran-Deming formula is mathematically expressed as $N = C + n1 + n2$, where N is the estimated total number of events. What does 'C' represent in this formula?
(A) The number of events missed by both systems.
(B) The total number of events recorded by the first system.
(C) The total number of events recorded by the second system.
(D) The number of events recorded by both systems.

143. Consider the following characteristics regarding the demographic profile of India:
1. A large youth population (demographic dividend).
2. Significant interstate variation in fertility and mortality.
3. An improving but still skewed sex ratio.
4. A declining population size.

Which of the above statement(s) is/are correct?
(A) 1, 2 and 4
(B) 1, 2 and 3
(C) 2, 3 and 4
(D) 1, 3 and 4

144. The main purpose of adjusting age data using techniques like Whipple's Index is for:
(A) Data collection
(B) Data evaluation
(C) Data storage
(D) Data encryption

145. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): The history of the world population shows that for most of human history, population growth was extremely slow.
Reason (R): High birth rates were largely offset by equally high death rates due to famine, disease, and war.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

146. A "social-psychological concept" relevant to population studies is the idea of "perceived barriers" to using contraception. This refers to:
(A) An individual's subjective beliefs about the difficulties of using contraception.
(B) The actual statistical cost of contraceptives.
(C) The formal legal prohibition of contraceptives.
(D) The physical distance to a health clinic.

147. Given below are two statements:
Statement I: The Indian census is a source of 'stock' data.
Statement II: The Civil Registration System is a source of 'flow' data.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct but Statement II is incorrect.
(D) Statement I is incorrect but Statement II is correct.

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148. Match List I with List II.
List I: (Term)
P. Social Change
Q. Social Institution
R. Social Group
S. Social Structure
List II: (Relevance to Population Studies)
1. Stratification affecting health disparities (e.g., class)
2. Aggregates like ethnicity or religion with distinct demographic patterns
3. Stable patterns like family or marriage that regulate demographic events
4. Long-term shifts like urbanization that alter population distribution

Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-3, R-2, S-1
(C) P-3, Q-4, R-1, S-2
(D) P-4, Q-1, R-2, S-3

149. One of the uses of the Comprehensive Nutrition Survey is to:
(A) Estimate the crude death rate.
(B) Measure the rate of marital breakdown.
(C) Provide robust data on the prevalence of micronutrient deficiencies in children.
(D) Count the number of international migrants.

150. A major strength of population surveys like the NFHS is:
(A) They are free from all types of errors.
(B) They can collect detailed information on attitudes and behaviors.
(C) They enumerate every single person in the country.
(D) The results are available within a week of data collection.

151. Which statement accurately describes a 'weakness' of a vital statistics system like the CRS in India?
(A) It provides too much detailed information.
(B) Its coverage is universal and complete, making it too expensive.
(C) It is a sample survey and suffers from sampling error.
(D) It suffers from significant under-reporting, especially in rural areas.

152. The UN Age-Sex Accuracy Index is a composite index. What does this mean?
(A) It is created by combining several individual indices into one summary score.
(B) It is composed of a single, simple statistical measure.
(C) It is only applicable to composite physical materials.
(D) It is a complex and highly unreliable measure.

153. A sociologist studying how marriage patterns differ between religious groups and how this affects fertility is demonstrating the:
(A) Complete separation of Sociology and Population Studies.
(B) Irrelevance of religion to demographic outcomes.
(C) Close and interdependent relationship between Population Studies and other social sciences.
(D) Superiority of one field over the other.

154. What is a primary difference between Whipple's Index and Myer's Index?
(A) Whipple's Index focuses only on digits 0 and 5, while Myer's Index assesses all 10 terminal digits.
(B) Whipple's Index measures mortality, while Myer's measures fertility.
(C) Whipple's Index is for adjusting data, while Myer's Index is for collecting data.
(D) Whipple's Index is used in India, while Myer's Index is used only in the United States.

155. Consider the following statements about the history and scope of population data sources:
1. The Indian Census has a history dating back to the late 19th century.
2. The Sample Registration System (SRS) was developed to overcome the deficiencies of the Civil Registration System (CRS).
3. The World Fertility Survey (WFS) was a precursor to the Demographic Health Surveys (DHS).
4. National Sample Surveys (NSS) primarily focus on collecting detailed demographic data.
5. Aging surveys are designed to understand the conditions of the young adult population.

Which of the above statement(s) is/are correct?
(A) 1, 2, and 3
(B) 2, 3, and 4
(C) 1, 4, and 5
(D) 1, 2, and 5

156. The phrase "Demographic profile of India and States" implies that:
(A) All states in India have identical demographic characteristics.
(B) There is a need to study population characteristics at both the national and sub-national levels.
(C) Demography is only relevant at the national level.
(D) State-level data is always more accurate than national data.

157. Given below are two statements:
Statement I: 'Society' and 'Culture' are synonymous terms and can be used interchangeably in population studies.
Statement II: 'Society' refers to the group of people and their social organization, while 'Culture' refers to their shared way of life, including beliefs and values.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is incorrect but Statement II is correct.
(D) Statement I is correct but Statement II is incorrect.

158. The dual-record feature of the Sample Registration System (SRS) involves:
(A) Recording births and deaths twice on the same form.

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(B) One record for males and one record for females.
(C) A government record and a private hospital record.
(D) A continuous enumeration and an independent retrospective survey.

159. The study of 'tribes in India and their culture' is important for demographers because these communities often have:
(A) Distinct health-seeking behaviors, marriage patterns, and fertility norms.
(B) The highest statistical levels of income and education.
(C) No established interaction with non-tribal populations.
(D) A population structure that is aging very rapidly.

160. Which error is the Chandrasekaran-Deming formula designed to address?
(A) Age heaping
(B) Incompleteness of registration in a vital statistics system.
(C) Digit preference
(D) Sampling error

161. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): Population surveys, despite being based on samples, are a crucial source of demographic data.
Reason (R): They can investigate topics in greater depth than a census and can be conducted more frequently to track changes.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

162. The 'historical background' of population studies reveals that early interests in population were often tied to:
(A) The state's need for soldiers, taxpayers, and laborers.
(B) Purely academic curiosity with no practical application.
(C) The development of environmental protection laws.
(D) The desire to promote international tourism.

163. The single most important use of the 'Aging Survey' is to:
(A) Project the total number of births in the next decade.
(B) Measure the fertility rate of women above age 60.
(C) Inform policy regarding social security, pensions, and healthcare for the elderly.
(D) Study the aggregate educational attainment of children.

164. In data appraisal, 'smoothing of age data' refers to the process of:
(A) Removing all individuals above a certain age from the dataset.
(B) Manually changing age data to fit a preconceived notion.
(C) Reporting all ages as multiples of five.
(D) Applying mathematical formulas to minimize irregularities caused by age misreporting.

165. The primary purpose of the first modern censuses in the 19th century, including in India, was for:
(A) Academic research
(B) Health interventions
(C) Administrative control and taxation.
(D) Cultural preservation

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166. A high value of Myer's Index (e.g., above 10) for a particular dataset indicates:
(A) High quality and accuracy of age reporting.
(B) Significant preference for certain terminal digits in age reporting.
(C) A very young population structure.
(D) Complete and accurate vital registration.

167. "The scientific study of the size, composition, and distribution of human populations and their changes resulting from fertility, mortality, and migration" is a comprehensive definition of:
(A) Sociology
(B) Anthropology
(C) Political Science
(D) Population Studies.

168. Which of the following is an example of 'social change' in India having a direct demographic impact?
(A) The changing colors of currency notes.
(B) The increasing acceptance and practice of inter-caste marriage.
(C) The launch of a new satellite.
(D) The change in the captain of the cricket team.

169. What is a key difference between the National Family Health Survey (NFHS) and the Census of India?
(A) The census is a sample survey, while the NFHS is a complete count.
(B) The census is conducted annually, while the NFHS is conducted decennially.
(C) NFHS provides more detailed health information, while the census provides a complete population count.
(D) The NFHS does not collect data on women and children.

170. Which of the following is a direct use of census data for social planning?
(A) Identifying areas with low female literacy to target educational programs.
(B) Accurately predicting future atmospheric weather conditions.
(C) Deciding on the appropriate interest rate for the national economy.
(D) Systematically analyzing current stock market performance trends.

171. The 'relevance of communication concepts' to population studies is best illustrated by:
(A) The statistical analysis of age data.
(B) The historical growth of the Indian population.
(C) The legal act that mandates the census.
(D) The design and implementation of information, education, and communication (IEC) campaigns.

172. Consider the following problems associated with the Civil Registration System in India:
1. Under-registration of births and deaths.
2. Delays in reporting and compilation of data.
3. Misreporting of the cause of death.
4. It is too expensive compared to a census.
5. It is conducted only once every ten years.

Which of the above statement(s) is/are correct?
(A) 1, 2, and 3
(B) 2, 3, and 4
(C) 3, 4, and 5
(D) 1, 4, and 5

173. Given below are two statements:
Statement I: Whipple's Index can range from 100 (no heaping) to 500 (maximum heaping).
Statement II: The index measures the concentration of ages on those ending in 0 and 5, relative to the total number of people in the relevant age range.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct but Statement II is incorrect.
(D) Statement I is incorrect but Statement II is correct.

174. The "current population scenario" in many developed countries is characterized by:
(A) Very high fertility rates.
(B) A large proportion of the population being under 15.
(C) Rapid urbanization from a rural base.
(D) Population aging and low or negative growth.

175. What is the relationship between the Demographic Health Surveys (DHS) and the National Family Health Surveys (NFHS)?
(A) The NFHS is the name given to the DHS program when implemented in India.
(B) They are entirely unrelated and competing international survey programs.
(C) The DHS is a smaller, less comprehensive version of the NFHS.
(D) The NFHS served as the model for the global DHS program.

176. Arrange the following processes in a logical order of data handling:
1. Data collection
2. Data adjustment and smoothing
3. Data evaluation for errors
4. Data dissemination

Which of the following represents the correct

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sequence?
(A) 1, 4, 3, 2
(B) 1, 3, 2, 4
(C) 4, 1, 2, 3
(D) 3, 1, 4, 2

177. The term 'kinship' in population studies is important because it defines:
(A) A person's specific nationality and official citizenship status.
(B) The network of social relationships and obligations that influence marriage and residence.
(C) An individual's current political party affiliation.
(D) The general level of technology used in a society.

178. A key strength of the Sample Registration System (SRS) is its ability to:
(A) Produce relatively accurate annual estimates of fertility and mortality rates.
(B) Provide a complete list of every household in India.
(C) Capture detailed information about political beliefs.
(D) Replace the need for a decennial census.

179. A researcher studying how people's values and beliefs about family size have changed over a generation is focusing on:
(A) The Civil Registration System.
(B) Myer's Index of age heaping.
(C) Social-psychological concepts in demography.
(D) The history of the Indian census.

180. The Chandrasekaran-Deming formula is used to estimate the number of vital events missed by two independent recording systems. Its application leads to an estimate of:
(A) The level of age heaping.
(B) The sex ratio at birth.
(C) The future population growth rate.
(D) The completeness of registration.

181. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): Evaluation and adjustment of population data are essential steps in demographic analysis.
Reason (R): No large-scale data collection effort, such as a census, is free from errors of coverage and content.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

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182. Which of the following is an example of 'social change' in India having a direct demographic impact?
(A) The changing colors of currency notes.
(B) The increasing acceptance and practice of inter-caste marriage.
(C) The launch of a new satellite.
(D) The change in the captain of the cricket team.

183. Which of the following is NOT a primary source of population data?
(A) Population census
(B) Sample Registration System
(C) National Family Health Survey
(D) A textbook on demography.

184. Match List I with List II.
List I: (Social Science)
P. Sociology
Q. Psychology
R. Economics
S. History
List II: (Area of Intersection with Population Studies)
1. Study of long-term population trends and their causes
2. Analysis of demographic dividend and labor supply
3. Study of social institutions like family and their impact on fertility
4. Analysis of individual attitudes and decision-making in fertility choices
Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-3, R-1, S-2
(C) P-3, Q-4, R-2, S-1
(D) P-3, Q-1, R-4, S-2

185. A researcher notices that the number of children reported in a survey is slightly lower than the true number because parents forgot to mention a child who lives elsewhere. This is an example of:
(A) Age heaping
(B) Sampling error
(C) Coverage error
(D) Content error

186. The concept of 'society and culture' is central to population studies because:
(A) Demographic behaviors are embedded in and shaped by social norms, values, and cultural contexts.
(B) Demographic processes are purely biological events entirely devoid of social meaning.
(C) Population data can only be collected from a singular type of society or culture.
(D) Society and culture represent purely statistical indices of population growth.

187. Consider the following statements about the Demographic Health Surveys (DHS) program:
1. It is internationally funded and provides technical assistance.
2. It uses standardized questionnaires to allow for cross-country comparability.
3. Its main focus is on fertility, health, and nutrition.
4. It is conducted only in developed countries.
5. It replaces the national census in the countries where it operates.

Which of the above statement(s) is/are correct?
(A) 1, 2, and 3
(B) 2, 3, and 4
(C) 3, 4, and 5
(D) 1, 2, and 5

188. If a census enumerator guesses the age of a respondent instead of asking, this introduces what type of error?
(A) Sampling error
(B) Content error
(C) Coverage error
(D) No error

189. Given below are two statements:
Statement I: The primary advantage of a sample survey over a census is that it provides a full count of the population.
Statement II: The primary advantage of a census over a sample survey is its lower cost and speed of data collection.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct but Statement II is incorrect.
(D) Statement I is incorrect but Statement II is correct.

190. The 'definition' of population studies has expanded over time to include:
(A) The restricted study of statistical population size.
(B) A narrower and more strictly confined field of inquiry.
(C) The exclusion of all social and economic development factors.
(D) The causes and consequences of population phenomena.

191. From a demographic standpoint, the Indian 'tribal' population is not a homogenous group. This means that:
(A) Significant diversity exists in culture and demographic indicators among tribal groups.
(B) All tribal groups in India exhibit the exact same population characteristics.
(C) Tribal people in India live exclusively in a single geographic state.
(D) Tribal populations do not experience any form of social change.

192. An important 'use' of the data from an Aging Survey is to:
(A) Plan for future school construction.
(B) Project the need for geriatric healthcare services.
(C) Estimate the infant mortality rate.
(D) Revise family planning program targets.

193. Which of the following is a limitation of the Sample Registration System (SRS)?
(A) It does not provide any data on births and deaths.
(B) Being a sample, it may not provide reliable estimates for small geographical areas.

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(C) It is more prone to under-registration than the Civil Registration System.
(D) The data is only released once every ten years.

194. The shift in population from high birth and death rates to low birth and death rates is a central concept in understanding:
(A) History of population in India and the world.
(B) The Chandrasekaran-Deming formula.
(C) The mechanics of the Whipple's Index.
(D) The administrative structure of the census.

195. Which of the following best defines a 'social institution' in the context of population studies?
(A) A physical building such as a hospital or a school.
(B) A government agency that collects statistical data.
(C) An established set of norms and structures that guide social life and behavior.
(D) A local group of friends.

196. The United Nations Age-Sex Accuracy Index is based on the assumption that, in the absence of major disturbances:
(A) The number of males and females should be exactly equal in every age group.
(B) The statistical sex ratio at birth should always be 100.
(C) The total population size must remain constant over time.
(D) Age ratios and sex ratios should change in a regular and predictable manner.

197. Consider the following statements about data appraisal techniques:
1. Whipple's Index measures age preference for digits 0 and 5.
2. A Myer's Index of 0 indicates no digit preference.
3. The UN Age-Sex Accuracy Index is a composite score.
4. The Chandrasekaran-Deming formula adjusts age data for heaping.

Which of the above statement(s) is/are correct?
(A) 1, 2 and 3
(B) 2, 3 and 4
(C) 1, 3 and 4
(D) 1, 2 and 4

198. The 'coverage' of the Indian census refers to its goal of:
(A) Asking questions on a wide variety of topics.
(B) Including every person residing in the country at a specified time.
(C) Publishing the results in all major newspapers.
(D) Surveying only the major cities of India.

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199. Given below are two statements:
Statement I: The National Sample Surveys (NSS) are multi-subject surveys carried out in successive rounds.
Statement II: A major and consistent theme in the NSS rounds has been data on consumer expenditure, employment, and unemployment.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct but Statement II is incorrect.
(D) Statement I is incorrect but Statement II is correct.

200. The relationship of population studies with other social sciences is best described as:
(A) Symbiotic.
(B) Hierarchical
(C) Antagonistic
(D) Non-existent

201. Which of the following is a primary objective of the decennial census?
(A) To provide annual birth and death rates.
(B) To measure the nutritional status of children.
(C) To obtain a complete and accurate count of the population and its characteristics.
(D) To study the effectiveness of family planning programs.

202. Which of the following is a source of error in population data that originates from the respondent?
(A) A person deliberately misreporting their income.
(B) An enumerator failing to visit a household.
(C) A data entry operator making a keying mistake.

(D) A programming error in the tabulation software.

203. The 'components of population change' are the three processes that directly affect population size. What are they?
(A) Literacy, Urbanization, Employment
(B) Culture, Society, Religion
(C) Census, Surveys, Vital Registration
(D) Fertility, Mortality, Migration.

204. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): The Civil Registration System (CRS) is, in principle, the ideal source for vital statistics.
Reason (R): It is designed to be a continuous, permanent, and compulsory legal record of all vital events as they occur.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

205. The 'scope and uses' of population surveys like the NFHS include all of the following EXCEPT:
(A) Providing data for policy making and program evaluation.
(B) Offering insights into health behaviors and service utilization.
(C) Serving as a legal proof of citizenship for individuals.
(D) Tracking changes in demographic and health indicators over time.

206. A "Blended" Index like Myer's is so named because it:
(A) Blends data from multiple countries.
(B) Blends survey data with census data.
(C) Blends age data with sex data.
(D) Computes a weighted total of populations to avoid bias from declining age groups.

207. Match List I with List II.
List I: (Population Data Source)
P. Census
Q. SRS
R. NFHS
S. CRS
List II: (Primary Purpose)
1. Estimation of annual vital rates through a dual-record system
2. Continuous legal registration of births and deaths
3. Comprehensive data on health, fertility, and nutrition from a sample survey
4. Complete count and characteristic profile of the population at a point in time
Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-1, R-3, S-2
(C) P-4, Q-3, R-1, S-2
(D) P-2, Q-4, R-3, S-1

208. The study of how family structures are changing from 'joint' to 'nuclear' in India and its impact on fertility and elderly care is an example of studying:
(A) The history of the census.
(B) Social change and its demographic consequences.
(C) Data adjustment techniques.
(D) The communication process.

209. A primary limitation of the World Fertility Survey (WFS) was that it:
(A) Focused too much on mortality.
(B) Did not include a strong component on maternal and child health beyond fertility.
(C) Was only conducted in developed countries.
(D) Was conducted by mail and had a low response rate.

210. Which statement about the United Nations Age-Sex Accuracy Index is correct?
(A) It combines separate scores for age ratios and sex ratios into a single value.
(B) It is used to measure the completeness of birth registration.
(C) A high score indicates high-quality data.
(D) It can only be calculated using vital registration data.

211. Consider the following statements about the relevance of "communication concepts" to Population Studies:
1. Understanding how health messages are disseminated and received.

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2. Analyzing the role of media in shaping fertility norms.
3. Designing effective Information, Education, and Communication (IEC) materials for family planning.
4. Calculating the crude death rate.

Which of the above statement(s) is/are correct?
(A) 1, 2 and 3
(B) 2, 3 and 4
(C) 1, 2 and 3
(D) 1, 3 and 4

212. Given below are two statements:
Statement I: The nature of population studies is singular and focused only on mathematical calculations.
Statement II: Population studies is a multi-disciplinary science that intersects with sociology, economics, psychology, and public health.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is incorrect but Statement II is correct.
(D) Statement I is correct but Statement II is incorrect.

213. The main difference between a de facto and a de jure census is:
(A) The cost of the enumeration.
(B) The year in which it is conducted.
(C) The basis of counting people (where they are found vs. where they usually live).
(D) The agency that conducts the census.

214. Which of the following is NOT a social institution that influences population dynamics?
(A) Family
(B) Whipple's Index.
(C) Marriage
(D) Religion

215. The historical trend of global population shows a dramatic acceleration in growth after:
(A) The fall of the Roman Empire.
(B) The beginning of the Stone Age.
(C) The recent year of 2010.
(D) The Industrial Revolution.

216. A researcher wants to study the health and economic conditions of people aged 60 and over in India. Which would be the most specific and appropriate survey for this purpose?
(A) Aging Survey.
(B) Reproductive and Child Health Survey (RCHS)
(C) Comprehensive Nutrition Survey
(D) World Fertility Survey (WFS)

217. Consider the following statements about the nature and scope of population data sources:
1. A census is a 'stock' measure, providing a snapshot at a point in time.
2. A vital registration system is a 'flow' measure, recording events over time.
3. A sample survey gathers data from a representative subset of the population.
4. The main advantage of a census is its low cost and rapid availability.
5. The main advantage of a sample survey is that it is free from all errors.

Which of the above statement(s) is/are correct?
(A) 1, 2, and 3
(B) 2, 3, and 4
(C) 3, 4, and 5
(D) 1, 2, and 5

218. The Chandrasekaran-Deming formula is an example of a:
(A) Data evaluation and adjustment technique.
(B) Data collection method
(C) Data visualization tool
(D) Population projection model

219. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): The study of tribes and their culture is relevant to population studies in India.
Reason (R): Tribal communities often display unique demographic profiles, including distinct patterns of fertility, mortality, and health, shaped by their specific cultural and social contexts.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

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220. The 'current population scenario' of India includes the challenge and opportunity of a 'demographic dividend'. This refers to:
(A) A rapidly aging population requiring high levels of dependency support.
(B) A large proportion of the population in young, working-age groups.
(C) The money sent by international migrants to their respective home countries.
(D) A government scheme to distribute dividends to all registered citizens.

221. Which of the following is a limitation of population census data?
(A) It provides data for small administrative units.
(B) It is too frequently conducted.
(C) The information collected is often limited in depth on any single topic.
(D) It is only conducted for a small sample of the population.

222. An enumerator in the field records a person's age as 35 when it is actually 37. This is classified as a:
(A) Coverage Error
(B) Sampling Error
(C) Systematic Error
(D) Content Error.

223. The role of 'social structure' in influencing population health is seen in:
(A) How stratification by caste or class leads to inequalities in healthcare access.
(B) The standardized way age heaping is measured across various census types.
(C) The initial design of a census questionnaire for urban population counts.
(D) The mathematical process of data smoothing applied to fertility datasets.

224. Which of the following methods is used to evaluate the completeness of vital registration data?
(A) Whipple's Index
(B) Chandrasekaran-Deming formula.
(C) Myer's Index
(D) United Nations Age-Sex Accuracy Index

225. Which of the following is the BEST example of a 'social-psychological concept' influencing fertility?
(A) The statistical number of health clinics established in a specific rural district.
(B) A couple's aspiration for their children's well-being leading to smaller families.
(C) The formal legal age at marriage established by national sovereign laws.
(D) The commercial availability of a new contraceptive technology in local clinics.

226. Given below are two statements:
Statement I: The Sample Registration System (SRS) provides vital rates for India and its major states.
Statement II: The SRS operates by combining data from a continuous enumeration by a resident enumerator with a retrospective survey every six months.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is incorrect but Statement II is correct.
(D) Statement I is correct but Statement II is incorrect.

227. The historical perspective on India's population reveals that the year 1921 is often called the 'Year of the Great Divide' because:
(A) It was the year of India's independence.
(B) It was the year the first census was conducted.
(C) It marked the beginning of a sustained and rapid population growth phase.
(D) It marked the beginning of a population decline.

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228. In the context of population studies, 'kinship' refers to:
(A) A general feeling of friendship towards other members of society.
(B) The total number of people living in a specific sovereign country.
(C) A specialized type of population survey used for economic analysis.
(D) The system of relationships based on blood ties and marriage.

229. Match List I with List II.
List I: (Term)
P. Content Error
Q. Coverage Error
R. Age Heaping
S. Data Smoothing
List II: (Definition)
1. A form of digit preference, where ages are rounded to numbers ending in 0 or 5
2. Incorrect recording of characteristics like age or occupation
3. Statistical adjustment of age data to minimize the effects of heaping
4. Omission or duplication of persons in a census count
Codes:
(A) P-2, Q-4, R-1, S-3
(B) P-4, Q-2, R-3, S-1
(C) P-2, Q-1, R-4, S-3
(D) P-3, Q-4, R-1, S-2

230. A key 'use' of the National Family Health Surveys (NFHS) is to:
(A) Provide a legal record of birth for individuals.
(B) Evaluate the performance of national health and family welfare programs.
(C) Conduct elections in the country.
(D) Estimate the Gross Domestic Product (GDP).

231. The primary focus of the 'World Fertility Survey' (WFS) was on:
(A) Mortality and morbidity
(B) Internal migration
(C) Aging and social security
(D) Human fertility and its determinants.

232. Which of the following is a major 'problem' associated with the Civil Registration System (CRS) in India?
(A) Significant under-registration of births and deaths.
(B) Its data is too accurate, making it difficult to analyze.
(C) It is updated too frequently.
(D) It only covers the urban population.

233. Which of the following techniques is specifically designed to assess preference for all ten terminal digits (0-9) in age reporting?
(A) Whipple's Index
(B) Bachi's Index
(C) Myer's Index
(D) UN Age-Sex Accuracy Index

234. The 'nature and scope' of population studies have broadened over time from simple population counts to include:
(A) Analysis of the interplay between population and socio-economic factors.
(B) The study of wild animal populations.
(C) The exclusive study of historical demography.
(D) A focus only on mathematical models.

235. Arrange the following data evaluation and adjustment concepts in a logical sequence:
1. Identify age heaping using Myer's Index.
2. Obtain single-year age data from a census.
3. Apply a smoothing technique to the age data.
4. Assess the overall quality using the UN Age-Sex Accuracy Index.
Which of the following represents the correct sequence?
(A) 2, 1, 4, 3
(B) 1, 2, 3, 4
(C) 2, 4, 1, 3
(D) 4, 2, 1, 3

236. A researcher studying how religious beliefs about the sanctity of life influence attitudes towards abortion is exploring the intersection of:
(A) Census history and survey methodology.
(B) Religion and population dynamics.
(C) Age-sex accuracy and data smoothing.
(D) The Civil Registration System and the Sample Registration System.

237. Consider the following statements about data sources:
1. Censuses are expensive and have a long time lag.
2. The SRS in India provides more reliable vital rates than the CRS.
3. Surveys like NFHS can collect in-depth data but are subject to sampling error.
4. The CRS is, in theory, a source of continuous data on vital events.
5. Whipple's Index is a survey, not a data evaluation tool.
Which of the above statement(s) is/are correct?

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(A) 1, 2, 3, and 5
(B) 2, 3, 4, and 5
(C) 1, 2, 3, and 4
(D) 1, 3, 4, and 5

238. The following question consists of two statements — Assertion (A) and Reason (R). Select the correct answer using the codes given below.
Assertion (A): Social change, such as the empowerment of women, is a critical variable in population studies.
Reason (R): Female education and autonomy are strongly correlated with lower fertility rates and improved child health outcomes.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

239. 'Population trends' analysis involves studying:
(A) Changes in population size, growth, and composition over time.
(B) Only the current size of the population.
(C) The methods of data collection exclusively.
(D) The biographies of famous demographers.

240. The difference between the data collected in a population survey and the actual 'true' value in the population, which occurs due to the process of sampling, is known as:
(A) Coverage error
(B) Sampling error.
(C) Content error
(D) Non-response error

241. What is the role of 'culture' in shaping demographic outcomes?
(A) It has no role; demography is purely biological.
(B) Norms, values, and beliefs that influence behaviors related to marriage.
(C) It is only relevant for studying ancient populations.
(D) It is a statistical measure of population growth.

242. The Indian census strives to be a 'de jure' enumeration, which means it aims to count individuals based on their:
(A) Usual place of residence.
(B) Location on the night of the census.
(C) Place of birth.
(D) Place of work.

243. Given below are two statements:
Statement I: The primary source of data for the Sample Registration System is the hospital record.
Statement II: The SRS uses a dual-record system involving a part-time enumerator and a full-time supervisor-surveyor.
Which of the above statement(s) is/are correct?
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is incorrect but Statement II is correct.
(D) Statement I is correct but Statement II is incorrect.

244. The main objective of applying smoothing techniques to age data is to:
(A) Increase the total population count.
(B) Estimate the infant mortality rate.
(C) Calculate the completeness of death registration.
(D) Reduce the fluctuations caused by age misreporting in the dataset.

245. Which of the following is a key advantage of a population survey over a census?
(A) It is free from all errors.
(B) It covers the entire population without exception.
(C) It is more cost-effective and can be conducted more frequently.
(D) It is legally mandated to be held every 10 years.

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246. The study of how attitudes, beliefs, and values affect a person's decision to migrate is an important part of:
(A) Statistical data appraisal.
(B) Comprehensive population studies.
(C) Indian census history.
(D) The Civil Registration System.

247. The 'demographic profile' of a state with a high proportion of young people and a low proportion of elderly people is said to have a:
(A) Old age structure
(B) Static age structure
(C) Negative age structure
(D) Young age structure.

248. The introduction of the Sample Registration System (SRS) in India was a direct response to the:
(A) Inadequacies and under-registration of the Civil Registration System.
(B) High cost of the decennial census.
(C) Success and completeness of the Civil Registration System.
(D) Need for detailed data on household expenditure.

249. Which of the following is a defining feature of the Indian census?
(A) It is conducted by a private organization.
(B) It is a voluntary survey.
(C) Conducted on a decennial basis.
(D) It focuses only on the economic aspects of the population.

250. The National Family Health Surveys (NFHS) in India have been instrumental in providing reliable data on:
(A) Key indicators such as infant mortality, fertility, and vaccination coverage.
(B) Total annual agricultural production and current domestic crop yields.
(C) Private political affiliations and specific household voting patterns.
(D) Aggregate monthly industrial output for established urban manufacturing.

Direction : Please read the following source carefully.

Population Studies, as a distinct field of academic inquiry, is fundamentally interdisciplinary, drawing its theoretical frameworks and methodological tools from a wide array of social sciences. Its nature and scope are defined by its central focus on the size, structure, distribution, and dynamics of human populations. The relationship with sociology is particularly profound, as demographic phenomena are deeply embedded within the social structure. Concepts such as social and racial groups, societal norms, and cultural values are indispensable for understanding variations in fertility, mortality, and migration patterns. For instance, the study of culture and its role in population studies illuminates why certain reproductive behaviors are prevalent in some societies but not in others. Similarly, anthropology provides insights into kinship systems and tribal cultures, which significantly influence demographic outcomes. Psychology contributes through social-psychological concepts, explaining how individual attitudes, beliefs, and motivations shape decisions related to family size and health-seeking behaviors. The process of communication, another key concept, is vital for the dissemination of information regarding family planning and public health, making it highly relevant to the study of population dynamics. Therefore, a comprehensive understanding of population issues necessitates an integrated approach that transcends the boundaries of a single discipline.

Based on the above source, attempt the following five questions.

251. According to the passage, what is the primary reason for Population Studies being considered an interdisciplinary field?
(A) Its historical development alongside other sciences.
(B) Its integration of concepts and methods from various social sciences.
(C) Its reliance on a singular, unified theory of population.
(D) Its focus on the statistical measurement of population size alone.

252. The passage suggests that the study of "culture and its role in population studies" is most useful for explaining:
(A) The differences in reproductive behaviors across societies.
(B) The global variation in population size.
(C) The historical evolution of demographic theories.
(D) The technical process of conducting a population census.

253. Which of the following relationships is highlighted in the passage as being particularly

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profound for understanding demographic phenomena?
(A) Population Studies and Political Science.
(B) Population Studies and Economics.
(C) Population Studies and Sociology.
(D) Population Studies and Geography.

254. Based on the text, what is the relevance of social-psychological concepts to Population Studies?
(A) They provide a framework for analyzing the racial composition of groups.
(B) They are used primarily for the statistical adjustment of population data.
(C) They help in understanding the historical trends of global population growth.
(D) They explain how individual motivations influence demographic decisions.

255. What role does the concept of communication play in the context of Population Studies, as described in the passage?
(A) It is relevant only for studying the cultural practices of tribal groups.
(B) It is a tool for understanding the social structure of ancient civilizations.
(C) It is crucial for disseminating information related to family planning and health.
(D) It serves as a primary method for collecting census data.

Direction : Please read the following source carefully.

Social institutions are the established, structured patterns of behavior and relationships that are accepted as a fundamental part of a culture, and they play a pivotal role in influencing demographic processes. Key among these are family, marriage, kinship, and religion. The institution of marriage, for example, directly impacts fertility and population growth through its norms regarding the age at marriage, the acceptability of celibacy, and the stability of unions. Family structures, whether nuclear or extended, shape decisions about the number and spacing of children, intergenerational support, and migration. Kinship systems, which define social relationships and obligations among relatives, can influence inheritance patterns and residential choices, thereby affecting household formation and mobility. Religion often provides a moral and ethical framework that guides beliefs and practices related to procreation, contraception, and health, leading to distinct demographic profiles among different religious groups. Furthermore, the processes of social change in a country like India, which involves shifts in these traditional institutions due to modernization, education, and economic development, are crucial for understanding contemporary demographic transitions. The unique cultural and institutional frameworks of specific groups, such as the diverse tribes in India, offer a microcosm for studying how deeply embedded social structures regulate population dynamics.

Based on the above source, attempt the following five questions.

256. According to the passage, how does the institution of marriage primarily influence population dynamics?
(A) By determining the racial composition of a society.
(B) By establishing norms that affect fertility and population growth.
(C) By controlling economic development and modernization.
(D) By exclusively defining kinship systems and obligations.

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257. The passage suggests that family structures, such as nuclear or extended families, have a direct bearing on:
(A) The religious composition of a nation.
(B) The official language and laws of a country.
(C) The selection of political leaders and government policies.
(D) The decisions regarding childbearing and migration.

258. What is the specified role of religion in influencing population studies, as per the text?
(A) It provides a moral framework that guides beliefs about procreation and health.
(B) It primarily influences political affiliations and social change.
(C) It is the main driver of economic development in tribal communities.
(D) It only affects the institution of marriage and not other demographic aspects.

259. Based on the passage, the study of tribes in India is significant for population studies because:

(A) They represent the majority of India's population.
(B) Their economic systems are the most advanced.
(C) They show how deeply embedded social structures regulate population dynamics.
(D) They are unaffected by social change and modernization.

260. The passage implies that social change in India is relevant to population studies because it involves:
(A) Shifts in institutions like family and marriage that affect demographic transitions.
(B) A complete erosion of all traditional social institutions.
(C) The uniform adoption of a single kinship system across the country.
(D) A decrease in the overall population of the country.

Direction : Please read the following source carefully.

The population census is a cornerstone of national data infrastructure, providing a comprehensive snapshot of a country's population at a specific point in time. Its history dates back to antiquity, but the modern census is defined by its scope of universal coverage, individual enumeration, and periodic execution. In India, the census has a rich historical background, with systematic decennial counts beginning in the late 19th century. The Indian census is renowned for its vast coverage, aiming to count every individual within the nation's borders. Its key features include the collection of a wide range of demographic, social, and economic data, such as age, sex, marital status, literacy, occupation, and migration status. The uses of census data are manifold; it is indispensable for governance, policy-making, electoral constituency demarcation, and national planning. It also serves as a sampling frame for other surveys. Despite its strengths, the census is not without weaknesses. The massive scale of the operation makes it prone to errors, including coverage errors (missing or double-counting people) and content errors (inaccurate reporting of characteristics). Furthermore, the long interval between censuses means the data can become outdated for addressing rapidly changing social phenomena, necessitating other data sources for more current information.

Based on the above source, attempt the following five questions.

261. What is described in the passage as a defining feature of the modern population census?
(A) It is conducted sporadically without a fixed schedule.
(B) It focuses only on a small sample of the population.
(C) It collects data solely on economic indicators.
(D) It involves universal coverage and periodic execution.

262. According to the text, a primary use of Indian census data is for:
(A) Conducting daily public opinion polls.
(B) Governance, policy-making, and national planning.
(C) International diplomatic negotiations.
(D) Private sector marketing and product development.

263. The passage identifies which of the following as a significant weakness of the population census?
(A) Its limited geographical coverage within a nation.
(B) The narrow range of information it collects.
(C) The data becoming outdated due to long intervals between counts.
(D) Its lack of historical background and precedent.

264. What type of error in a census involves the inaccurate reporting of individual characteristics like age or literacy?
(A) A sampling error.
(B) A procedural error.
(C) A coverage error.
(D) A content error.

265. As per the passage, in what way does the census support other data collection activities?
(A) By serving as a sampling frame for other surveys.
(B) By providing funding for other research projects.
(C) By training enumerators for all national data collection.
(D) By replacing the need for any other type of

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survey.

Direction : Please read the following source carefully.

The collection of data on vital events—primarily births, deaths, and marriages—is crucial for understanding population dynamics. In India, two principal systems are tasked with this: the Civil Registration System (CRS) and the Sample Registration System (SRS). The CRS, with a long historical background, is designed to be a comprehensive and continuous system for recording all vital events across the country. By law, it is mandatory for every birth and death to be reported and registered. However, the CRS has historically faced significant problems, including under-registration and incomplete coverage, particularly in rural areas. Delays in reporting and a lack of public awareness have hampered its effectiveness, making the data it produces unreliable for calculating accurate national-level vital rates. To overcome these limitations, the Sample Registration System (SRS) was initiated. The SRS is a dual-record system operating on a sample basis. It involves continuous enumeration of vital events in selected sample units by a resident enumerator, followed by an independent retrospective survey every six months. The data from both sources are matched, and an intensive field verification is conducted for mismatched and unmatched events. This robust methodology provides reliable estimates of fertility and mortality rates at the national and state levels, making the SRS a key advantage and a more dependable source for demographic indicators than the CRS, despite its own limitation of being a sample and not a full count.

Based on the above source, attempt the following five questions.

266. What is the fundamental difference in design between the Civil Registration System (CRS) and the Sample Registration System (SRS)?
(A) The CRS is voluntary, while the SRS is mandatory.
(B) The CRS aims for universal coverage, while the SRS operates on a sample basis.
(C) The CRS collects data monthly, while the SRS collects it annually.
(D) The CRS records only deaths, while the SRS records only births.

267. According to the passage, why was the Sample Registration System (SRS) initiated in India?
(A) To replace the population census entirely.
(B) To overcome the limitations and under-registration of the CRS.
(C) To provide data exclusively for international agencies.
(D) To focus solely on the registration of marriages and migrations.

268. The passage describes the methodology of the SRS as a "dual-record system." This involves:
(A) Continuous enumeration combined with a retrospective survey.
(B) Recording each event in two separate government offices.
(C) Using data from both the census and national surveys.
(D) Requiring two witnesses to register a single vital event.

269. Which of the following is mentioned as a persistent problem with the Civil Registration System (CRS) in India?
(A) Its excessive cost of operation compared to the SRS.
(B) Its complex statistical formulas that are handle to interpret.
(C) Incomplete coverage and under-registration of vital events.
(D) Its focus on urban areas to the complete exclusion of rural areas.

270. What is a key advantage of the SRS as described in the passage?
(A) It provides a complete count of every individual in the country.
(B) It is the oldest system for vital statistics in India.
(C) It eliminates the need for the decennial census.
(D) It provides reliable estimates of fertility and mortality rates.

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Direction : Please read the following source carefully.

Beyond the census and vital registration systems, large-scale population surveys are a critical source of demographic and health data, offering depth and flexibility that other sources may lack. These surveys are designed to collect detailed

information on a wide range of topics from a representative sample of the population. Their primary advantage lies in their ability to explore complex relationships between demographic, social, economic, and health variables. Major examples include the National Sample Surveys (NSS) in India, which cover various socio-economic aspects, and international survey programs like the World Fertility Survey (WFS), which pioneered standardized, comparable fertility data across countries. Its successor, the Demographic and Health Surveys (DHS) program, expanded this scope to include a wide array of health indicators. In India, the National Family Health Surveys (NFHS) are part of the DHS program and have become a principal source of data on fertility, mortality, family planning, and maternal and child health. Other significant surveys mentioned in the syllabus include the Reproductive and Child Health Survey (RCHS), the Comprehensive Nutrition Survey, and specialized studies like the Aging survey. While invaluable for policy and research, a key limitation of surveys is that they are subject to sampling errors, and the accuracy of their estimates depends on the quality of the sample design and fieldwork execution.

Based on the above source, attempt the following five questions.

271. What is the primary advantage of large-scale population surveys as described in the passage?
(A) They provide a complete count of the entire population without any error.
(B) They are less expensive and quicker to conduct than a full census.
(C) They allow for the detailed exploration of complex relationships between variables.
(D) They have replaced the need for both the census and vital registration systems.

272. The National Family Health Surveys (NFHS) in India are identified in the text as being part of which larger international program?
(A) The World Fertility Survey (WFS).
(B) The Demographic and Health Surveys (DHS).
(C) The National Sample Surveys (NSS).
(D) The Comprehensive Nutrition Survey.

273. According to the passage, the World Fertility Survey (WFS) was a pioneering program because it:
(A) Was the first survey to study aging populations.
(B) Focused exclusively on economic data in India.
(C) Replaced the Demographic and Health Surveys (DHS).
(D) Created standardized, comparable fertility data across many countries.

274. Which of the following is mentioned as a key limitation of population surveys?
(A) They are subject to sampling errors affecting the accuracy of estimates.
(B) They collect a very narrow range of information.
(C) They are not subject to any kind of error.
(D) They are conducted continuously without any break.

275. The passage indicates that surveys like the RCHS, Comprehensive Nutrition Survey, and Aging survey are examples of:
(A) Surveys that are components of the decennial census.
(B) Global surveys that have been discontinued.
(C) Specialized surveys focusing on specific demographic or health topics.
(D) Administrative records rather than population-based surveys.

Direction : Please read the following source carefully.

The quality of population data is paramount for accurate demographic analysis and policy formulation. However, data collected from sources like censuses and surveys are often subject to various types of errors. These can be broadly classified as coverage errors and content errors. A particularly common type of content error is the misreporting of age, often manifesting as "age heaping" or "digit preference," where respondents tend to report ages ending in certain digits, typically 0 and 5. To detect and measure the extent of such inaccuracies in age data, demographers employ several techniques for data appraisal and adjustment. Among the most well-known are Whipple's Index and Myer's Index. Whipple's Index is specifically designed to

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measure the preference for terminal digits 0 and 5. Myer's Index is a more comprehensive method that examines preference for all ten terminal digits (0 through 9). Another important tool is the United Nations Age-Sex Accuracy Index, which evaluates the overall quality of age and sex data by analyzing age ratios, sex ratios, and their consistency across age groups. While these indices are powerful diagnostic tools, their application rests on certain assumptions, such as the expected smoothness of the age distribution in the absence of errors. Understanding their applications and limitations is crucial for any researcher working with raw population data.

Based on the above source, attempt the following five questions.

276. According to the passage, what is "age heaping"?
(A) A type of error where respondents prefer to report ages ending in specific digits.
(B) A method for adjusting inaccurate age data.
(C) The tendency for a population to be older on average.
(D) An index used to measure the accuracy of sex ratio data.

277. What is the specific purpose of Whipple's Index as described in the text?
(A) To measure the preference for all ten terminal digits in age reporting.
(B) To evaluate the overall accuracy of sex ratio data.
(C) To adjust and smooth the entire age distribution.
(D) To measure the preference for terminal digits 0 and 5 in age reporting.

278. How does Myer's Index differ from Whipple's Index, based on the information provided?
(A) Myer's Index is simpler to calculate than Whipple's Index.
(B) Myer's Index examines preference for all terminal digits, whereas Whipple's focuses on 0 and 5.
(C) Myer's Index is used for sex data, while Whipple's Index is for age data.
(D) Myer's Index is an older technique that has been replaced by Whipple's Index.

279. The United Nations Age-Sex Accuracy Index is described as a tool that:
(A) Only measures the preference for the digit 0.
(B) Corrects coverage errors in the census count.
(C) Evaluates the overall quality of age and sex data by analyzing their consistency.
(D) Is used exclusively for appraising data from vital registration systems.

280. The passage suggests that the application of indices like Whipple's and Myer's is based on the assumption that:
(A) Age distributions are naturally irregular and jagged.
(B) Every respondent reports their age with perfect accuracy.
(C) Content errors are more significant than coverage errors.
(D) An age distribution should be relatively smooth in the absence of reporting errors.

Direction : Please read the following source carefully.

The study of population dynamics is centered on understanding the mechanisms that cause populations to change over time. These mechanisms are encapsulated in a set of basic demographic concepts, principally the components of population change. Any change in the size of a population within a defined territory and time period is attributable to three fundamental processes: fertility, mortality, and migration. Fertility refers to the actual reproductive performance of a population, typically measured by the number of live births. It is the primary driver of population growth. Mortality relates to the frequency of deaths within a population, acting as a force of attrition. The interplay between fertility and mortality determines the rate of natural increase (or decrease), which is the difference between the number of births and deaths. The third component, migration, involves the movement of people across defined boundaries for the purpose of changing residence. It is composed of two aspects: immigration (movement into an area) and emigration (movement out of an area). The net effect of these movements is termed net migration. The overall population change is therefore calculated by the demographic balancing equation, which states that population change equals natural increase plus net migration. These components are the

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building blocks for all demographic analysis and projection.

Based on the above source, attempt the following five questions.

281. According to the passage, which three fundamental processes are the components of population change?
(A) Fertility, mortality, and migration.
(B) Urbanization, industrialization, and modernization.
(C) Census, surveys, and vital statistics.
(D) Age, sex, and social structure.

282. The passage defines "natural increase" as:
(A) The total number of people moving into a country.
(B) The difference between the number of births and the number of deaths.
(C) The overall growth of the population including migration.
(D) The actual reproductive performance of a population.

283. What is the role of migration in the demographic balancing equation?
(A) It is considered part of the natural increase.
(B) It is a component that, along with natural increase, determines overall population change.
(C) It is only relevant for studying historical population trends.
(D) It is a synonym for fertility and mortality combined.

284. Based on the text, what does the term "fertility" specifically refer to in a demographic context?
(A) The actual reproductive performance of a population.
(B) The biological capacity to reproduce.
(C) The number of deaths in a population.
(D) The movement of people across borders.

285. The demographic balancing equation is described as a formula where population change is equal to:
(A) Fertility minus mortality.
(B) Immigration minus emigration.
(C) Natural increase plus net migration.
(D) The total number of births in a year.

Direction : Please read the following source carefully.

The history of the human population is characterized by long periods of slow growth followed by a rapid acceleration in recent centuries. Global population trends reveal significant variation in size and growth rates across different regions and countries. For much of human history, high mortality rates, driven by famine, disease, and war, kept population growth in check despite high fertility. The demographic transition, beginning in Europe in the 18th century, marked a shift to a new equilibrium of low mortality and low fertility, leading to an unprecedented surge in population size. The history of population in India mirrors this global pattern but with its own distinct timeline and characteristics. India has experienced a dramatic increase in its population, particularly in the second half of the 20th century, driven by a sharp decline in mortality rates while fertility remained high for a longer period. The current population scenario in India presents a complex demographic profile. While the country is still one of the most populous in the world, it is experiencing a slowdown in its growth rate as fertility rates decline. However, there is considerable diversity in the demographic profiles of its states, with some southern states exhibiting low, near-replacement fertility levels, while some northern states still have relatively high fertility, creating a varied demographic landscape within the nation.

Based on the above source, attempt the following five questions.

286. According to the passage, what primarily kept global population growth slow for most of human history?
(A) Low fertility rates.
(B) Government-enforced population controls.
(C) Widespread migration to uninhabited lands.
(D) High mortality rates due to famine, disease, and war.

287. The passage describes the "demographic transition" as a shift towards:
(A) High mortality and high fertility.
(B) High mortality and low fertility.
(C) Low mortality and low fertility.
(D) Low mortality and high fertility.

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288. What was the main driver of India's rapid population increase in the second half of the 20th century, as per the text?
(A) A significant increase in the fertility rate.
(B) A sharp decline in mortality combined with sustained high fertility.
(C) A massive influx of immigrants from neighboring countries.
(D) The complete eradication of all infectious diseases.

289. Which statement best describes India's current population scenario as presented in the passage?
(A) The population growth rate is accelerating rapidly across all states.
(B) The country is experiencing a uniform decline in population size.
(C) Fertility rates have become identical in all northern and southern states.
(D) The overall growth rate is slowing, but there is significant demographic diversity among states.

290. The passage implies that the demographic profile of India is not monolithic because:
(A) There is significant variation in fertility levels between different states.
(B) The global population trend does not apply to India.
(C) India's population history is shorter than that of European nations.
(D) Mortality rates have started to increase again in recent years.

Direction : Please read the following source carefully.

While demographic analysis often focuses on macro-level trends, the influence of individual-level factors, explained through social-psychological concepts, is of critical relevance to Population Studies. These concepts help bridge the gap between societal structures and individual demographic behaviors, such as decisions about marriage, childbearing, and migration. Attitudes, values, and beliefs are central social-psychological constructs that shape a person's perception of ideal family size, the costs and benefits of children, and the acceptability of contraceptive use. For instance, an individual's perceived social norms—what they believe others in their community do or expect them to do—can be a powerful predictor of their own fertility behavior. Furthermore, the process of communication is inextricably linked to these psychological elements. Communication concepts are relevant not just as a mechanism for the top-down dissemination of family planning messages, but as a complex social process. Effective communication involves understanding the audience's pre-existing beliefs, crafting messages that are culturally sensitive, and using channels that are trusted by the community. The relevance of these communication processes is paramount in public health campaigns aimed at changing health-seeking behaviors or promoting new social norms related to population issues, making both social psychology and communication studies integral to applied demography.

Based on the above source, attempt the following five questions.

291. What is the primary role of social-psychological concepts in Population Studies, as described in the passage?
(A) To provide purely statistical measures of population growth.
(B) To analyze the historical evolution of census methods.
(C) To connect societal structures with individual demographic behaviors.
(D) To focus exclusively on the biological aspects of reproduction.

292. According to the text, concepts like attitudes, values, and beliefs are important for understanding:
(A) Decisions related to family size and contraceptive use.
(B) The technical details of vital registration systems.
(C) The mathematical formulas for population projection.
(D) The geographical distribution of racial groups.

293. The passage suggests that "perceived social norms" can be a strong predictor of an individual's:
(A) Genetic predispositions.
(B) Economic status.
(C) Political affiliation.
(D) Fertility behavior.

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294. How does the passage characterize the relevance of communication processes in the context of population studies?
(A) As a simple, top-down method for disseminating official information.
(B) As a complex social process requiring an understanding of audience beliefs.
(C) As a concept only relevant to the study of pre-modern societies.
(D) As a tool used solely for collecting data during surveys.

295. An inference from the passage is that effective public health campaigns related to population issues must:
(A) Ignore the cultural context of the target audience.
(B) Rely exclusively on mass media for message dissemination.
(C) Craft culturally sensitive messages and use trusted channels.
(D) Focus only on the economic benefits of small families.

Direction : Please read the following source carefully.

The evaluation and adjustment of population data extend beyond assessing age reporting. A critical aspect of data appraisal involves evaluating the completeness of vital registration data. Even with mandatory registration systems, under-registration of births and deaths is a common problem, leading to inaccurate vital rates. A classic technique developed to address this issue is the Chandrasekaran-Deming formula. This method is based on a dual-record approach, where two independent sources collect data on vital events for the same population. By cross-classifying the events captured by each source (captured by source 1 only, by source 2 only, and by both), the formula allows for an estimation of the number of events missed by both sources, thereby providing an estimate of the total number of events and the completeness of each registration system. The application of this formula is foundational to the design of the Sample Registration System (SRS) in India. In addition to evaluating completeness, demographers also employ methods for the smoothing of age data. When data appraisal reveals significant age heaping, smoothing techniques (such as moving averages or polynomial fitting) are used to adjust the raw data to produce a more plausible and smooth age distribution, which is essential for calculating accurate age-specific rates and for constructing life tables.

Based on the above source, attempt the following five questions.

296. What is the primary purpose of the Chandrasekaran-Deming formula as described in the passage?
(A) To measure age heaping on digits 0 and 5.
(B) To smooth an irregular age distribution.
(C) To calculate the United Nations Age-Sex Accuracy Index.
(D) To estimate the completeness of vital registration data.

297. The Chandrasekaran-Deming method is based on which fundamental principle?
(A) The use of data from two independent collection sources.
(B) The analysis of a single, comprehensive data source.
(C) The assumption that all vital events are perfectly registered.
(D) The application of polynomial fitting to age data.

298. According to the text, the Chandrasekaran-Deming formula allows demographers to estimate the number of:
(A) People who have migrated out of the study area.
(B) Vital events missed by both independent sources.
(C) Households in a given sample unit.
(D) Errors in the reporting of sex in a census.

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299. The passage states that the design of which system in India is founded on the principles underlying the Chandrasekaran-Deming formula?
(A) The National Sample Survey (NSS).
(B) The Sample Registration System (SRS).
(C) The decennial Population Census.
(D) The National Family Health Survey (NFHS).

300. What is the goal of "smoothing of age data" as mentioned in the passage?
(A) To adjust raw data to produce a more

plausible and regular age distribution.

(B) To introduce artificial errors into the data for testing purposes.

(C) To increase the level of age heaping to highlight reporting preferences.

(D) To convert age data into sex ratio data for comparison.

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ANSWERS

1. (B) The scientific study of human populations, including their size, structure, distribution, and the processes that change them.
Population studies involves the comprehensive analysis of human groups, focusing on both quantitative and qualitative aspects. This field examines the size, density, and spatial distribution of people alongside the dynamic processes of fertility, mortality, and migration that drive demographic change. By employing scientific methodologies, it explores how social and economic factors interact with biological variables to shape the structure and evolution of populations over time.

2. (A) Population Studies provides the demographic context for sociological analysis of social structures and institutions.
The intersection of population studies and sociology is foundational to understanding social organization. Demography offers the statistical and structural framework, such as age and sex distribution, which sociologists use to analyze institutions like family and education. This relationship allows researchers to examine how population shifts, such as aging or urbanization, influence social structures, norms, and the overall functioning of diverse human societies across different historical periods.

3. (C) Mortality
Population dynamics are governed by three fundamental biological and social processes that determine the size and growth of human groups. These essential components include fertility, which adds individuals; mortality, which removes them; and migration, which involves the movement of people across geographical boundaries. Among these, the study of death rates is critical for understanding life expectancy, health status, and the natural increase or decrease within a specific region.

4. (D) It provides the socially legitimate context for reproduction and family formation.
In the field of demography, the institution of marriage is analyzed primarily as a regulatory mechanism for reproduction. It establishes the social and legal framework within which childbearing typically occurs, thereby influencing fertility levels and the formation of new household units. By defining the timing and frequency of unions, marriage patterns directly impact the demographic transition and the long-term growth trajectories of populations within various cultural and legal settings.

5. (A) Both A and R are true and R is the correct explanation of A.
The Sample Registration System is widely regarded as a more reliable source for vital statistics in India compared to the Civil Registration System. This reliability stems from its dual-record methodology, which involves continuous enumeration by a resident recorder and independent surveys every six months. This approach effectively identifies and corrects omissions, whereas the civil registration process often suffers from significant under-reporting due to administrative gaps and lack of awareness.

6. (B) Attitudes towards contraceptive use.
Social-psychological concepts in population studies focus on the internal motivations and perceptions that drive demographic behavior. While birth rates and migration counts are objective statistical measures, attitudes toward family planning represent the cognitive and emotional factors influencing individual decision-making. These psychological variables are essential for understanding why certain demographic trends occur, as they mediate the relationship between broader socio-economic conditions and personal choices regarding reproduction and health-seeking practices.

7. (D) The census in India is conducted on a de facto basis only.
The Indian census employs a complex methodology that integrates various enumeration techniques to ensure comprehensive coverage. While it includes provisions for counting the houseless population on a specific night, it primarily operates on an extended de facto basis

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with elements of de jure counting during the enumeration period. Identifying it as exclusively de facto is inaccurate, as the process focuses on usual residents and accounts for their presence over a designated timeframe.

8. (A) P-3, Q-4, R-1, S-2
Demographic data collection involves diverse surveys tailored to specific research objectives. The World Fertility Survey pioneered international comparisons of reproductive behavior, while Demographic Health Surveys focus on maternal and child health indicators in developing nations. The National Sample Survey provides vital socio-economic data including consumer expenditure patterns in India. Conversely, aging surveys are specialized tools designed to evaluate the unique health, social, and economic needs of the growing elderly population segments.

9. (C) The statistical portrait of the population including age, sex, literacy, and density.
A demographic profile serves as a comprehensive statistical summary that describes the fundamental characteristics of a population at a given time. It encompasses vital dimensions such as age structure, sex ratio, educational attainment, and population density. This portrait allows policymakers and researchers to understand the composition of a society, identify trends in human development, and formulate targeted strategies for economic planning and social welfare based on the specific needs.

10. (A) Whipple's Index
Whipple's Index is a specialized statistical tool designed to detect a specific type of age misreporting known as digit preference or age heaping. It specifically measures the tendency of respondents to round their ages to numbers ending in zero or five. A value of one hundred indicates no preference, while higher values signify significant data quality issues. This index is essential for evaluating the accuracy of age data in censuses and large-scale demographic surveys.

11. (B) 1, 3 and 4
The Civil Registration System in India operates under a legal framework established by the Registration of Births and Deaths Act of 1969. While it aims to provide a continuous and permanent record of vital events, it has historically struggled with significant under-registration across many regions. Unlike the ideal scenario of universal coverage, the system faces challenges in completeness, making external systems like the Sample Registration System necessary for accurate national vital rate estimation.

12. (B) The medium through which the message travels from sender to receiver.
In any communication process, the channel represents the physical or technological vehicle used to transmit information. In the context of population studies and health campaigns, this could include mass media such as television and radio, or interpersonal methods like health worker visits. Identifying the most effective channel is vital for ensuring that demographic information and family planning messages reach the intended audience accurately and efficiently without distortion or significant signal loss.

13. (C) Statement I is correct but Statement II is incorrect.
Social change and demographic processes are deeply interconnected rather than independent. For instance, advancements in female education in India have historically led to increased reproductive autonomy and a subsequent decline in fertility rates. Conversely, claiming that social shifts have no influence on population dynamics ignores the fundamental reality that human behaviors regarding birth, death, and movement are shaped by the evolving social, economic, and cultural environment in which individuals and groups exist.

14. (A) 2, 1, 3, 4
India has a long history of collecting population data through various systematic efforts. The first synchronous all-India census was established in 1881, followed by the National Sample Surveys in 1950 to gather socio-economic details. The Sample Registration System was introduced in the late 1960s to provide annual vital rates. Finally, the National Family Health Surveys began in the early 1990s to offer comprehensive health indicators, reflecting an evolution in data collection methodology and focus.

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15. (A) The two sources of data collection are statistically independent.
The Chandrasekaran-Deming formula is a statistical technique used to estimate the total number of vital events by comparing two different data sources. Its validity relies on the fundamental assumption that the probability of an event being recorded in one source is completely independent of its recording in the other. This independence allows for the calculation of events missed by both systems, thereby improving the overall completeness and accuracy of birth and death registration estimates.

16. (B) They often exhibit unique demographic characteristics and cultural practices influencing them.
The study of tribal populations in India is a critical aspect of demography due to their distinct social organizations and cultural norms. These groups often display demographic patterns that vary significantly from the national average, including unique marriage customs, health-seeking behaviors, and fertility preferences. Analyzing these differences helps researchers understand the impact of cultural contexts on population dynamics and allows for the development of more effective, culturally sensitive health and social policies.

17. (C) 1, 2, 3, and 5
The Indian census is a massive administrative exercise conducted every ten years to achieve universal enumeration of the population. It involves two distinct phases: house listing and housing census, followed by the actual population enumeration. This process provides a detailed snapshot of individual characteristics at a specific point in time, following a de jure approach. It is organized by the Office of the Registrar General and Census Commissioner, rather than international health organizations.

18. (A) Content error
Content errors in demographic data occur when the information recorded for an individual is inaccurate or misstated. Age heaping is a prime example, where respondents round their ages to numbers ending in preferred digits, typically zero or five. This type of error distorts the reported age structure of the population, even if the total count remains correct. Specialized statistical indices are used to detect and measure these errors to ensure the reliability of analysis.

19. (C) A research paper analyzing census data.
Primary sources of population data are those where information is collected directly from the population through enumeration or registration. Examples include the decennial census, vital registration systems, and large-scale surveys like the Demographic Health Surveys. In contrast, research papers and reports that analyze this existing data are considered secondary sources. These secondary documents interpret and synthesize findings but do not involve the original collection of individual records from the field or registry.

20. (D) Multi-disciplinary
Population studies is inherently multi-disciplinary, integrating concepts and methods from various fields to understand human groups. It draws on sociology to study social structures, economics to analyze labor and consumption, biology to understand fertility and mortality, and statistics for quantitative modeling. This diverse approach is necessary because population dynamics are influenced by a complex interplay of social, economic, psychological, and environmental factors, making it impossible to study through a single traditional academic lens.

21. (C) Age data
Myer's Index is a statistical tool specifically designed to evaluate the accuracy of age reporting in censuses and surveys. It measures the extent of digit preference or age heaping by examining the frequency of ages ending in each of the ten terminal digits from zero to nine. This index identifies systematic biases where respondents round their ages to preferred numbers, providing a summary measure of the overall quality and reliability of the age distribution.

22. (A) Both A and R are true and R is the correct explanation of A.
Social institutions such as family and religion are fundamental determinants of demographic behavior. They establish the norms, values, and beliefs that guide individual and group decisions regarding the timing of marriage, desired family size, and the use of healthcare services. By shaping these behaviors, social institutions

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directly influence the broader trends of fertility, mortality, and migration. Therefore, analyzing these institutions is essential for understanding the underlying causes of population change in any society.

23. (B) A period of slow growth followed by a phase of rapid acceleration.
The demographic history of India is characterized by distinct phases of growth. For centuries, the population grew slowly and sporadically due to high birth rates being offset by high mortality from famines and diseases. After 1921, improvements in health and sanitation led to a definitive decline in death rates while fertility remained high, resulting in a period of rapid acceleration. This transition represents the classic demographic shift experienced by many nations during their developmental journey.

24. (A) Incomplete coverage and under-registration
Although the Civil Registration System is legally mandated in India, its primary limitation remains the significant under-registration of vital events. This incompleteness is often caused by a lack of public awareness regarding the importance of certificates and administrative barriers in remote areas. Consequently, the data generated by the system often fails to represent the true levels of fertility and mortality, necessitating the use of alternative systems like the Sample Registration System for more reliable estimates.

25. (B) P-3, Q-4, R-1, S-2
Social sciences utilize specific concepts to categorize human organization. A society is an organized group associated for common purposes, while culture encompasses their shared values and artifacts. Social structure refers to the patterned arrangements within these groups, such as hierarchies and institutions. Kinship represents a specialized web of social relationships based on ancestry or marriage. Together, these elements provide the framework through which demographic behaviors, such as marriage and childbearing, are understood and analyzed.

26. (A) A group of people distinguished by shared physical or hereditary traits.
In population classification, a racial group is typically defined by shared biological or physical characteristics that are inherited across generations. This classification focuses on visible traits like skin color or facial features, distinguishing it from ethnic or social groups which are based on shared culture, language, or nationality. While the use of racial categories has evolved, they remain relevant in demography for studying health disparities, genetic history, and the social implications of perceived biological differences.

27. (D) Was the first large-scale, internationally comparable survey of fertility in developing countries.
The World Fertility Survey was a landmark international research program conducted in the 1970s and 1980s. It was significant for being the first large-scale effort to collect standardized and comparable data on human fertility across many developing nations. By using uniform questionnaires and methodologies, it allowed researchers to analyze global reproductive trends and factors influencing family size, paving the way for the subsequent and more comprehensive Demographic Health Surveys program used worldwide today.

28. (C) 1, 2 and 3
Comprehensive population analysis relies on multiple data sources, each with unique strengths. Censuses aim for a full count of the population at specific intervals, providing essential baseline data. Vital registration systems are designed to record births and deaths as they occur, capturing dynamic changes. Sample surveys, such as the National Family Health Survey, collect detailed information from a representative subset. Contrary to common misconceptions, surveys are not inherently less accurate than censuses for specific detailed topics.

29. (C) Adjust for the effects of age heaping and misreporting.
Smoothing of age data is a statistical procedure used to correct irregularities in age distributions often caused by misreporting or digit preference. In many populations, respondents round their ages, leading to artificial spikes at certain digits. Smoothing techniques apply mathematical formulas to redistribute the population more realistically across age groups. This process improves the reliability of demographic analysis,

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such as life table construction and population projections, by providing a more accurate representation of the population.

30. (A) Both Statement I and Statement II are correct.
The United Nations Age-Sex Accuracy Index is a composite statistical tool used to evaluate the quality of demographic data. It integrates separate measures of age ratios and sex ratios across different age groups to identify inconsistencies or errors in reporting. A lower numerical value on this index indicates that the data is more accurate and follows expected biological patterns. Higher values suggest significant errors, such as age heaping or gender-based under-enumeration, requiring careful adjustment before analysis.

31. (A) Sample Registration System (SRS)
The Sample Registration System is the primary source for annual estimates of birth and death rates in India at both national and state levels. It was established to overcome the deficiencies of the Civil Registration System by using a dual-record approach. By combining continuous enumeration with periodic retrospective surveys in a representative sample of units, it provides timely and reliable vital statistics. This system is essential for monitoring demographic trends between the decennial census years.

32. (B) The preference for sons, which can affect sex ratios and fertility behavior.
Culture significantly shapes demographic outcomes by establishing the norms and values that guide reproductive behavior. A prominent example in many societies is the preference for male children, which often leads to skewed sex ratios and higher fertility rates as families continue to reproduce until a son is born. This cultural value directly impacts the size, composition, and growth of the population, demonstrating that demography is deeply embedded in the social and cultural fabric of society.

33. (B) National Family Health Surveys (NFHS)
The National Family Health Survey is the Indian counterpart to the international Demographic Health Surveys program. It utilizes similar methodologies and standardized questionnaires to collect comprehensive data on fertility, maternal and child health, nutrition, and family planning. Like the global DHS, the NFHS provides high-quality, representative data that allows for comparison across different regions and over time. This survey is a crucial tool for policymakers to monitor health indicators and evaluate various social programs.

34. (A) Complete geographical coverage of the country.
A primary strength of the population census is its commitment to universal coverage, aiming to enumerate every individual within a country's territory. This complete geographical reach allows for the generation of demographic data at the smallest administrative levels, such as villages or wards. Unlike sample surveys, which provide representative estimates for larger areas, the census offers a total count that is essential for administrative planning, resource allocation, and the delimitation of electoral constituencies across the nation.

35. (C) A static and unchanging caste system
Social change in India involves dynamic shifts in various social, economic, and cultural dimensions that influence demographic processes. This includes increasing urbanization, rising age at marriage, and significant improvements in female literacy, all of which contribute to changing fertility and mortality patterns. In contrast, the idea of a static and unchanging caste system is contrary to the concept of social change, which recognizes that even traditional structures evolve over time due to modernization, policy, and social movements.

36. (D) It uses a dual-record system of continuous enumeration and a retrospective survey.
The Sample Registration System is characterized by its unique dual-record methodology, designed to ensure high-quality vital statistics. It involves a resident enumerator who maintains a continuous record of births and deaths in a sample unit, supplemented by an independent survey conducted every six months by a supervisor. The results from both sources are matched to identify and verify every event. This rigorous process minimizes omissions, providing more reliable annual estimates than the traditional registration system.

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37. (C) 1881
Although several regional and partial population counts were attempted in India during the 19th century, the first truly synchronous and complete all-India census was conducted in 1881. This event marked the beginning of a decennial tradition that has continued without interruption, providing a consistent historical record of India's population. The 1881 census established the standardized methodology and scope that formed the foundation for modern demographic data collection and administrative planning in the Indian subcontinent.

38. (B) Estimating the completeness of event registration.
The Chandrasekaran-Deming formula is a statistical tool used in demography to evaluate how effectively vital events are being captured by registration systems. By comparing two independent sources of data covering the same population, the formula calculates the number of events that were likely missed by both systems. This provides an estimate of the total number of actual births or deaths, allowing researchers to determine the level of completeness and adjust reported vital rates accordingly.

39. (D) Interdependence and mutual enrichment.
Population studies maintains a symbiotic relationship with other social sciences, characterized by mutual influence and interdependence. While demography provides the essential quantitative data on population size and structure, fields like sociology, economics, and psychology offer the theoretical frameworks to explain the social and behavioral drivers of demographic change. Conversely, demographic trends provide the necessary context for analyzing social institutions and economic development. This interdisciplinary collaboration enriches the overall understanding of human society and its complex dynamics.

40. (A) Myer's Index - Measures preference for all terminal digits
Myer's Index is accurately identified as a comprehensive measure of age heaping that examines the preference for all ten terminal digits from zero to nine. In contrast, Whipple's Index focuses specifically on digits zero and five. The UN Index assesses both age and sex ratios, while the Chandrasekaran-Deming formula is used for estimating the completeness of event registration rather than measuring age heaping. Understanding these specific applications is crucial for correct demographic data appraisal.

41. (B) 1, 3, and 4
The size and composition of a population are directly altered by three primary components: fertility, mortality, and migration. Fertility adds individuals through births, while mortality removes them through deaths. Migration involves the movement of people across geographical boundaries, affecting the population of both the origin and destination. While social mobility and education levels are important demographic characteristics that influence these processes, they are not considered the direct biological or physical components that change population size.

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42. (A) The health, social, and economic conditions of the elderly.
An aging survey is a specialized demographic tool designed to gather detailed information about the older segments of the population. Its primary objective is to assess the specific needs, health status, living arrangements, and economic security of the elderly. As many countries experience a demographic shift toward older age structures, data from these surveys is essential for formulating policies related to social security, geriatric healthcare, and social support systems for senior citizens.

43. (B) They are subject to sampling errors.
A fundamental limitation of population surveys is their susceptibility to sampling error, which arises because data is collected from only a subset of the population. This error represents the difference between the survey estimate and the true population value. While surveys can provide more detailed information on specific topics than a census and are often more cost-effective, their results are always estimates with a certain margin of error, requiring careful statistical interpretation for generalized conclusions.

44. (A) Both A and R are true and R is the correct explanation of A.
Myer's Index is considered a more comprehensive and refined tool for evaluating age reporting

quality compared to Whipple's Index. This superiority arises because Myer's Index analyzes the preference for every terminal digit from zero to nine, whereas Whipple's Index is restricted to identifying heaping only on digits zero and five. By examining all digits, Myer's Index provides a more complete picture of systematic reporting biases, making it a more robust measure for demographic data appraisal.

45. (C) Universal, simultaneous, and have a defined periodicity.
According to international standards, a population census is defined by its commitment to universality, simultaneity, and regular periodicity. This means it must attempt to count every person in a defined territory at a specific point in time, and be repeated at regular intervals, typically every ten years. These characteristics ensure that the data is comprehensive, comparable over time, and serves as a reliable baseline for administrative planning and the scientific study of population trends.

46. (D) Assessing the receiver's understanding and reaction to the message.
Feedback is an essential component of the communication process, providing a mechanism for the sender to evaluate the effectiveness of their message. In the context of population studies and health campaigns, feedback allows organizers to determine if the audience has correctly understood the information provided and to observe their reactions or changes in behavior. This information is crucial for refining communication strategies, correcting misunderstandings, and ensuring that future messages are more effective and impactful.

47. (B) P-3, Q-1, R-2, S-4
Errors in demographic data can be classified into several types. Age heaping is a specific digit preference where ages are rounded, typically to zero or five. Coverage error occurs when individuals or households are entirely missed during enumeration. Content error involves the incorrect recording of specific characteristics, such as an incorrect age. Sampling error is the inherent difference between a survey estimate and the true population value due to the selection of a subset for study.

48. (A) Both Statement I and Statement II are correct.
The Reproductive and Child Health Survey was a specialized data collection effort in India designed to monitor indicators related to maternal and child health programs. It provided detailed information at the district level, which was essential for local planning. Over time, the scope and methodology of such surveys evolved, leading to the integration of these health indicators into the more comprehensive National Family Health Survey, which now serves as the primary source for such data.

49. (B) Political Parties.
Primary sources of population data are systematic and official methods of collecting information directly from people. These include the decennial census, vital registration systems that record births and deaths, and scientifically designed demographic surveys. Political parties, while they may collect and use information for their own purposes, are not official or primary sources of demographic data. Their records are not collected through standardized demographic methodologies and lack the universality and reliability required for scientific population analysis.

50. (A) A declining but still significant population growth rate.
The current population situation in India is characterized by a significant transition where the growth rate is gradually declining as fertility levels fall across many states. Despite this slowdown, the absolute size of the population continues to increase due to demographic momentum. This scenario presents a complex landscape where the country must manage the needs of a large, growing population while simultaneously preparing for the long-term implications of declining birth rates and changing age structures.

51. (C) The consistency of age and sex data from a census or survey.
The United Nations Age-Sex Accuracy Index is a composite measure used by demographers to evaluate the quality of population data. It analyzes the consistency of reported age and sex distributions by examining age ratios and sex ratios across five-year age groups. By comparing observed data with expected biological and statistical patterns, the index provides a numerical

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score that indicates the overall level of accuracy and the potential presence of errors such as age misreporting.

52. (D) A wide range of socio-economic subjects, including employment and consumer expenditure.
The National Sample Surveys in India are comprehensive data collection efforts primarily focused on socio-economic indicators. Conducted in various rounds, these surveys provide detailed information on household consumer expenditure, employment, health, and education. While they occasionally include demographic topics, their main strength lies in offering a deep understanding of the economic conditions and social well-being of the population. This data is essential for formulating development policies and tracking progress in various sectors of the Indian economy.

53. (A) 2, 1, 4, 3
Large-scale demographic surveys have evolved chronologically to address changing research needs. The World Fertility Survey pioneered standardized international data collection in the 1970s. It was followed by the Demographic Health Surveys program in the 1980s. In India, the specialized Reproductive and Child Health Survey was conducted in the late 1990s, while the comprehensive National Family Health Surveys emerged as the dominant model, with its first round conducted in the early 1990s and subsequent rounds expanding in scope.

54. (B) A society.
A society is defined as a large, organized collection of individuals who reside in a common territory, engage in regular social interaction, and share a distinct culture. In population studies, the concept of society provides the essential context for understanding how group organization and collective identity influence demographic behaviors. The structures and norms within a society dictate the patterns of marriage, family formation, and social mobility, which in turn drive the broader trends of population change.

55. (D) Whipple's index is a method for evaluating coverage error.
Data appraisal is a critical process because demographic data is rarely perfect and often contains various inaccuracies. While Myer's Index is used to assess the quality of single-year age data and identify reporting biases, Whipple's Index is specifically designed to measure age heaping, which is a type of content error. Incorrectly identifying Whipple's Index as a measure of coverage error is a mistake, as coverage errors refer to the omission or duplication of individuals, not the quality of their reported information.

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56. (C) 1, 2, 3, and 5
A population census is defined by several core characteristics that ensure its scientific and administrative utility. These include universality within a specific territory, the individual enumeration of every person, and simultaneity, meaning data refers to a well-defined point in time. Additionally, a census must follow a regular periodicity, typically every ten years. Contrary to sample-based surveys, a true census must attempt to count the entire population rather than relying on a subset to provide accurate baseline data.

57. (C) Age heaping
The phenomenon where an unusually high number of people report their age ending in certain preferred digits, such as zero or five, is known as age heaping. This is a common form of content error in demographic data, often occurring because respondents are unsure of their exact age and round it to the nearest convenient number. This bias distorts the reported age structure of the population, necessitating the use of adjustment techniques to provide a more accurate demographic analysis.

58. (A) Ability to provide data on a continuous basis, yielding annual estimates.
A major advantage of the Sample Registration System over the decennial census is its ability to provide continuous data on vital events. By using a dual-record system in a representative sample of units, it generates annual estimates of birth and death rates. This allows policymakers to monitor demographic changes more frequently and respond to emerging trends in real-time. In contrast, census data, while providing universal coverage, is only collected once every ten years, leaving significant gaps between counts.

59. (D) Hierarchies and social stratification can influence access to resources, health, and mortality.
The study of social structure is vital for demography because the way a society is organized significantly impacts the life chances of its members. Hierarchies based on class, caste, or gender create disparities in access to education, nutrition, and healthcare. These social stratifications directly influence demographic outcomes, leading to variations in fertility, mortality, and life expectancy across different social groups. Understanding these structural factors is essential for explaining why certain populations experience different demographic trajectories.

60. (B) CRS - A survey conducted on a sample of the population
The Civil Registration System is inaccurately described as a sample survey. In reality, it is designed to be a universal and compulsory administrative system for the continuous registration of all vital events, such as births and deaths, as they occur. In contrast, the National Family Health Survey is a sample survey, the Sample Registration System provides annual vital rate estimates through a dual-record approach, and the census is a complete enumeration conducted every ten years.

61. (C) Developing countries generally have higher population growth rates than developed countries.
Global population trends reveal a significant disparity in growth rates between different regions. Most developing countries are in the middle stages of the demographic transition, where declining mortality combined with relatively high fertility leads to rapid population growth. In contrast, many developed nations have reached a stage of low fertility and low mortality, resulting in very slow or even negative population growth. This variation highlights the different demographic challenges and economic opportunities faced by nations at different stages of development.

62. (D) A very high quality of age data with no preference for specific digits.
In demographic data appraisal, a Whipple's Index value close to one hundred signifies that the reported age data is of excellent quality. This score indicates that there is no systematic preference for rounding ages to digits zero or five, and that the age distribution follows a natural, expected pattern. Values significantly higher than one hundred indicate increasing levels of age heaping, which can distort the analysis of age structures and necessitate statistical adjustments to improve the reliability of the data.

63. (A) A more integrated and broader approach to collecting health and demographic data.
The evolution of demographic and health data collection in India saw a transition toward the National Family Health Survey model, which offers a more comprehensive and integrated approach. While earlier surveys like the Reproductive and Child Health Survey were narrower in scope, the NFHS encompasses a wider range of indicators, including nutrition, chronic diseases, and detailed family welfare information. This shift allows for a more holistic understanding of the health and demographic landscape, providing better evidence for multi-sectoral policy making.

64. (D) 1, 2 and 4
Population data collection is a complex process prone to various challenges and inaccuracies. Censuses frequently encounter errors in both coverage and the content of reported information. In India, the Civil Registration System is primarily hindered by significant under-registration of vital events. To address these deficiencies, the Sample Registration System was developed as a dual-record system to provide more reliable annual vital statistics. It is a misconception to assume that scientific surveys like the NFHS are entirely free from errors.

65. (A) Both A and R are true and R is the correct explanation of A.
Kinship systems are powerful social structures that significantly influence demographic behavior. By defining rules of lineage, inheritance, and residence, these systems shape the environment in which decisions about marriage and family size are made. For instance, patrilocal residence and son-preference norms can affect the social status of women and their reproductive autonomy, leading to distinct demographic patterns. Therefore, understanding

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the kinship structure of a community is essential for analyzing its fertility trends and overall population dynamics.

66. (A) The detailed nutritional status and biomarkers of children and adolescents.
The Comprehensive Nutrition Survey is distinguished by its specialized focus on the nutritional health of children and adolescents. Unlike broader surveys like the NFHS, it collects detailed objective data, including clinical measurements and biomarkers, to assess micronutrient deficiencies and other nutritional indicators. This specialized approach provides a deeper understanding of nutritional challenges that are not captured by standard demographic or general health surveys, making it a critical tool for designing targeted public health interventions for young populations.

67. (C) Statement I is incorrect but Statement II is correct.
Population studies has evolved beyond being a merely descriptive discipline that provides statistical facts and figures. While it relies on accurate enumeration and registration, it is primarily an analytical field that seeks to understand the complex causes and consequences of demographic phenomena. By examining the interplay between population trends and social, economic, and environmental factors, demographers provide the insights necessary for predicting future changes and formulating policies that address the needs of changing populations.

68. (C) P-4, Q-3, R-1, S-2
Various sources provide specialized demographic information in India. The census is a decennial exercise aiming for complete enumeration of the entire population. The Sample Registration System utilizes a dual-record approach to provide reliable annual estimates of vital rates. The Civil Registration System is the legally mandated, continuous recording of births and deaths. The National Family Health Survey is a large-scale sample survey that offers detailed data on health, nutrition, and family welfare across the country.

69. (C) Measuring the prevalence of a belief that having many children ensures old-age security.
The application of social-psychological concepts in population studies involves exploring how individual and collective beliefs, motivations, and perceptions influence demographic outcomes. A classic example is investigating the belief that large families provide essential security and support in old age. This psychological factor can strongly drive fertility decisions, even in the presence of economic or social changes. Understanding these underlying mentalities is crucial for explaining demographic trends that might otherwise appear irrational from a purely economic or biological perspective.

70. (B) Church records of baptisms, marriages, and burials in Europe.
The historical roots of vital statistics collection can be traced back to the practice of maintaining parish registers in Europe. Long before modern government systems, churches recorded religious ceremonies such as baptisms, marriages, and burials. These records provided a continuous and detailed historical account of life events within communities, forming the basis for early demographic analysis. This tradition eventually evolved into the formalized civil registration systems and statistical bureaus that are essential for tracking population dynamics in modern nations.

71. (D) Providing daily updates on the stock market.
Population census data is a versatile resource used for various administrative and planning purposes. It is essential for the delimitation of electoral constituencies, ensuring fair representation. Additionally, it provides the baseline data necessary for formulating social and economic development policies, such as planning for schools and hospitals. However, a census is a periodic snapshot and not a real-time data source; therefore, it is entirely unrelated to and unsuitable for providing frequent updates on daily financial markets.

72. (A) Inconsistent and incomplete reporting of vital events.
A significant challenge for the Civil Registration System in India is the inconsistency and incompleteness of event reporting. While legally required, many births and deaths go unregistered,

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especially in rural areas or among marginalized groups, due to a lack of awareness or logistical difficulties. This under-registration makes the CRS data less reliable for calculating national vital rates. Improving this system is a major goal for demographers to ensure a continuous and accurate record of population change.

73. (C) Births, Deaths, and Migration
The size and growth of any human population are determined by three fundamental demographic processes. Births add individuals to the population, while deaths remove them. Migration involves the movement of people across geographical boundaries, either entering or leaving a specific area. These three components represent the direct biological and physical mechanisms of population change. All other factors, such as socio-economic conditions or cultural norms, influence population size only by affecting the rates and patterns of these core processes.

74. (A) Evaluating the extent of age misreporting.
Myer's Index and Whipple's Index are statistical techniques used by demographers to assess the quality of age data collected in censuses and surveys. Both indices measure the extent of digit preference or age heaping, where respondents round their ages to certain numbers. By identifying these systematic errors, researchers can determine the reliability of the reported age structure. These tools are essential for data appraisal, ensuring that subsequent analysis and policy decisions are based on accurate population information.

75. (A) 3, 4, 2, 1
The Indian census is a massive undertaking that proceeds through several logical stages. It begins with meticulous planning and preparatory work to ensure all administrative and technological requirements are met. This is followed by the house listing and housing census, which provides the frame for the second phase. The actual population enumeration then takes place, followed by the final stages of data processing and dissemination. This sequence ensures the systematic and comprehensive coverage of the entire nation.

76. (B) Attitudes towards family size, contraception, and abortion.
Religion plays a significant role in population studies through its profound influence on social norms and individual behaviors. Religious beliefs and teachings often shape attitudes toward fundamental demographic issues such as family size, the use of contraception, and abortion. These values can lead to distinct patterns of fertility and healthcare utilization among different religious groups. Understanding these cultural influences is essential for demographers to explain variations in population growth and to design effective, culturally sensitive public health programs.

77. (C) It is a very expensive and time-consuming exercise.
While a population census provides a wealth of essential data, it has significant inherent weaknesses. Conducted decennially, it is an enormous administrative and logistical undertaking that requires massive financial resources and thousands of personnel. The process of enumerating the entire population and then processing and verifying the results is extremely time-consuming. Consequently, there is often a significant delay between data collection and the final release of results, which can limit the immediate utility of the data for rapidly changing situations.

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78. (D) Demographic Health Surveys (DHS)
The Demographic Health Surveys are a global program of large-scale sample surveys that provide comprehensive and standardized data on health and population indicators in developing countries. They are particularly valued for their detailed information on maternal and child health, fertility trends, and family planning practices. Because they use similar methodologies across various nations, they allow for meaningful international comparisons. This makes the DHS an essential resource for researchers and international organizations to monitor global health progress and evaluate programs.

79. (A) 1, 2, 3, and 4
Demographic data appraisal involves several specialized techniques and concepts. The Chandrasekaran-Deming formula utilizes two independent data sources to estimate the

completeness of event registration. Myer's Index is a comprehensive tool for measuring digit preference across all ten terminal digits, offering more detail than Whipple's Index. The UN Age-Sex Accuracy Index combines age and sex ratios for a quality assessment, while smoothing is used to correct errors like heaping. It is a misconception to view the SRS as a single, flawless system.

80. (B) Substantive demography
The study of population trends, global variations in size, and the patterns of population growth falls under the category of substantive demography. This branch of the field focuses on describing and analyzing the actual demographic characteristics and processes of human populations. Unlike formal demography, which deals with mathematical models, or data appraisal, which focuses on accuracy, substantive demography explores the real-world implications of demographic change and its relationship with the broader social and economic environment.

81. (B) Inheritance patterns, marriage rules, and household structure.
Kinship systems are fundamental social institutions that dictate the organization of family life and the relationships between individuals. They establish the rules for marriage, define who is considered family, and determine how property and status are inherited. These patterns directly influence demographic outcomes by shaping household structures and family size decisions. In population studies, understanding the kinship system is essential for explaining why different societies exhibit distinct patterns of reproductive behavior, social support, and domestic organization.

82. (A) The failure to include all individuals or households in the enumeration, or counting them more than once.
Coverage error in a census refers to inaccuracies in the total population count. This occurs when certain individuals or entire households are missed during the enumeration process, or conversely, when people are counted more than once. This type of error affects the overall population size and its distribution across different regions. Demographers use various techniques, such as post-enumeration surveys, to identify and measure coverage errors to ensure the reliability and accuracy of the final census results.

83. (A) Both A and R are true and R is the correct explanation of A.
Communication is a vital process within population studies, particularly for the success of public health and family planning initiatives. Effective communication strategies are necessary to disseminate demographic information, promote healthy behaviors, and encourage the adoption of modern contraceptive methods. By understanding communication concepts like source, channel, and feedback, organizers can design more impactful campaigns that address local needs and cultural contexts. Therefore, analyzed through the lens of population studies, communication is a key tool for driving social and demographic change.

84. (D) Its primary focus is usually on socio-economic indicators, not core demography.
While the National Sample Surveys in India are an invaluable source of data, their utility for core demographic estimation is limited by their primary focus. The NSS rounds are primarily designed to gather detailed information on socio-economic subjects such as employment, consumption patterns, and poverty. While they may include some demographic questions, they do not provide the specialized and frequent vital statistics found in systems like the SRS. Consequently, researchers often rely on other dedicated sources for precise and timely demographic parameters.

85. (A) Both Statement I and Statement II are correct.
The Indian census methodology is a sophisticated blend of different enumeration principles. It primarily strives for a de jure count, recording individuals at their usual place of residence to provide a consistent snapshot of the population distribution. However, it also includes provisions for a de facto count of specific groups, such as the houseless population, who are enumerated wherever they are found on a designated night. This combined approach ensures the most comprehensive and accurate coverage possible.

86. (A) P-4, Q-3, R-1, S-2
Various indices and formulas are used for demographic data appraisal. Whipple's Index

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specifically measures age heaping on digits zero and five, while Myer's Index offers a more comprehensive measurement across all digits from zero to nine. The UN Age-Sex Accuracy Index provides an overall assessment of data quality by analyzing age and sex ratios. The Chandrasekaran-Deming formula is a specialized tool used to estimate the completeness of vital registration by comparing two independent data sources for consistency.

87. (D) Higher fertility and mortality rates compared to the national average.
Demographic analysis of tribal populations in India often reveals patterns that are distinct from the general population. Due to factors such as geographical isolation, limited access to modern healthcare, and unique cultural norms, many tribal groups exhibit higher rates of both fertility and mortality. These trends contribute to a younger age structure and present specific challenges for health and development planning. Understanding these disparities is essential for creating targeted interventions that address the unique needs and vulnerabilities of tribal communities.

88. (A) NFHS provides more in-depth and specialized information on health topics.
A major advantage of the National Family Health Survey over decennial census data is the depth and specificity of the health information it provides. While the census provides a full count of basic characteristics, the NFHS collects detailed data on clinical health indicators, maternal and child healthcare, nutrition, and behaviors. This specialized data is invaluable for health researchers and policymakers to evaluate program effectiveness, identify specific health gaps, and develop targeted strategies that the broader census cannot address.

89. (C) Incorrectly recording a person's age, marital status, or occupation.
A content error in a census occurs when the characteristics of an enumerated individual are recorded inaccurately. This is different from coverage error, which involves missing or double-counting people. Content errors can arise from respondent misreporting, enumerator mistakes, or data entry errors. Examples include recording an incorrect age, misidentifying a person's occupation, or stating a wrong marital status. These inaccuracies can distort the analysis of the population's composition, even if the total population count is relatively accurate.

90. (A) Aggregates of people with shared characteristics, such as caste, class, or ethnicity, which can influence demographic behavior.
In population studies, the term social groups refers to collections of individuals who share common characteristics that influence their demographic behavior. These groups are often defined by attributes such as caste, ethnicity, religious affiliation, or economic class. Because members of these groups often share similar values and experiences, they may exhibit distinct patterns of fertility, mortality, and migration. Analyzing population data by social group is essential for identifying disparities and understanding how social factors shape demographic trends.

91. (D) Stagnant growth, steady growth, and rapid high growth.
The demographic history of India is characterized by three distinct phases. The period before 1921 saw stagnant and fluctuating growth due to high birth rates being offset by high mortality from famines and epidemics. This was followed by a phase of steady growth as mortality began to decline. In the second half of the 20th century, India experienced a period of rapid high growth, often termed a population explosion, as death rates fell sharply while fertility remained high.

92. (B) Individual attitudes, motivations, and decision-making processes related to fertility and migration.
The relationship between population studies and psychology is most evident in the study of individual demographic behavior. While demography often focuses on aggregate statistical trends, psychology provides the tools to understand the underlying attitudes, motivations, and cognitive processes that drive personal decisions. This includes examining how people make choices about the number of children to have, the use of contraceptives, and the decision to migrate. Integrating psychological insights is essential for developing effective communication and behavioral change programs.

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93. (C) Large spikes in population counts at ages ending in 0 and 5.
Smoothing of age data is most necessary when a dataset exhibits clear evidence of age heaping, characterized by artificial spikes in population counts at ages ending in preferred digits like zero and five. These spikes indicate that many respondents rounded their ages, leading to an inaccurate representation of the population's true age structure. Smoothing techniques apply mathematical formulas to redistribute these individuals, providing a more realistic and reliable age distribution for use in detailed demographic analysis and projections.

94. (A) 1, 2 and 3
The Indian census is a foundational source of demographic data, providing a comprehensive profile of the country's population. It is essential for the delimitation of electoral constituencies and serves as a vital sampling frame for many other specialized surveys. However, it is a decennial exercise and is not designed to provide frequent, annual estimates of birth and death rates. For such timely vital statistics, researchers rely on other systems like the Sample Registration System, which operates continuously between census years.

95. (A) It provides the system of shared meanings, values, and norms that guide people's lives.
Culture is a fundamental determinant of demographic behavior because it provides the framework of shared meanings, values, and norms that guide human life. These cultural elements shape individual and group decisions regarding marriage, reproductive choices, and healthcare practices. In population studies, understanding the cultural context is essential for explaining variations in fertility and mortality rates across different communities. By analyzing cultural influences, demographers can gain a deeper understanding of the social drivers behind the statistical trends observed in populations.

96. (C) Statement I is incorrect but Statement II is correct.
The Demographic Health Surveys are an internationally standardized program, often receiving funding and technical support from global agencies like USAID. While implemented locally, they are not exclusive to any single government. In India, the National Family Health Survey serves as the official domestic version of this global program. It is adapted to the specific Indian context while maintaining the standardized methodology that allows for the high-quality, comparable data used by health researchers and policymakers worldwide.

97. (A) 1, 2, 3, and 4
Social change in India involves various interrelated phenomena that significantly influence demographic trends. Shifts from joint to nuclear family systems, rising levels of female education and labor force participation, and technological advancements in agriculture all play a role in changing fertility, mortality, and migration patterns. Even the persistence of traditional religious beliefs is relevant, as these beliefs shape attitudes toward reproductive health. A stagnant political landscape, however, is contrary to the dynamic nature of social change and its demographic implications.

98. (A) More reliable and timely vital rates than the CRS.
The Sample Registration System was established in India to provide high-quality and timely vital statistics that the Civil Registration System often fails to deliver. By using a dual-record approach in a representative sample, it generates reliable annual estimates of birth and death rates at the state and national levels. This frequent data is essential for monitoring demographic progress between the decennial census years. Unlike the CRS, which is prone to under-registration, the SRS offers more accurate parameters for planning.

99. (C) A narrow focus on political arithmetic to a broad multi-disciplinary science.
The field of population studies has undergone a significant evolution throughout its history. Originally emerging as a form of political arithmetic focused on simple counts for taxation and military purposes, it has developed into a sophisticated and broad multi-disciplinary science. Modern population studies integrates insights from sociology, economics, statistics, and health sciences to analyze the complex causes and consequences of demographic change. This transition reflects the growing recognition that

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population dynamics are deeply intertwined with all aspects of human society.

100. (D) Age ratios and sex ratios should change smoothly and regularly from one age group to the next.
For the United Nations Age-Sex Accuracy Index to effectively evaluate data quality, it relies on the fundamental assumption that age and sex distributions should follow natural, predictable patterns. In a population not affected by major events like war or massive migration, the ratios of males to females and the transitions between age groups should be smooth and regular. Significant deviations from these expected patterns, detected by the index, indicate errors such as age misreporting or gender-based under-enumeration.

101. (B) 2, 3, 1
Sources of population data vary in the frequency with which they are collected. The Civil Registration System is designed to be a continuous process, recording events as they occur daily. Surveys like the National Family Health Survey are conducted periodically, typically every few years, to track health and demographic changes. The population census is the least frequent of these major efforts, being conducted only once every ten years due to its massive scale and high cost.

102. (B) Reproduction, socialization, and consumption.
The family is a central social institution in population studies because it serves as the primary unit for essential demographic and social processes. It is the context in which most reproduction occurs, directly influencing fertility rates. Furthermore, families are responsible for the socialization of children and function as the basic unit of economic consumption and support. By shaping these behaviors, the structure and dynamics of the family directly impact the growth, composition, and well-being of the broader population.

103. (D) Coverage errors and content errors.
Errors in population data are broadly classified into two major categories based on their nature. Coverage errors refer to inaccuracies in the total count of the population, such as missing individuals or double-counting them. Content errors occur when the characteristics of enumerated people, such as their age, occupation, or education, are recorded incorrectly. Understanding these two types of errors is essential for demographers to accurately evaluate data quality and apply the necessary adjustments to ensure reliable results.

104. (A) Myer's Blended Index
When a demographer needs to evaluate a dataset for systematic digit preference in age reporting, Myer's Blended Index is the most appropriate and comprehensive tool. Unlike simpler measures, it examines the preference for all ten terminal digits from zero to nine. By providing a summary index of overall digit preference, it allows researchers to identify patterns of rounding or systematic misstatement. This tool is essential for data appraisal and for determining if mathematical smoothing is necessary to correct errors.

105. (A) Both A and R are true and R is the correct explanation of A.
The year 1921 is recognized as a major turning point in India's demographic history, often called the Year of the Great Divide. Before this time, population growth was slow and erratic as high birth rates were cancelled out by frequent mortality spikes from famines and epidemics. After 1921, improvements in health and sanitation led to a sustained decline in mortality, while birth rates remained high, initiating a period of steady and eventually rapid population growth that continues today.

106. (C) Statement I is incorrect but Statement II is correct.
The Reproductive and Child Health Survey was a specialized data collection effort focused on health, rather than agricultural policy. Its primary goal was to provide detailed, district-level data to monitor the performance of India's Reproductive and Child Health program. This survey was essential for identifying local gaps in healthcare services and for planning targeted interventions to improve maternal and child health outcomes. It was later integrated into more comprehensive survey models that address a wider range of health indicators.

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107. (A) Both Statement I and Statement II are correct.
Social structure refers to the enduring and organized patterns of relationships and institutions that form a society. In population studies, this concept is highly relevant as social structures create hierarchies and systems of stratification, such as class and caste. These structures determine the distribution of power and resources, which in turn leads to disparities in access to education, nutrition, and healthcare. Consequently, these structural factors directly influence demographic outcomes, including health status, mortality rates, and overall life expectancy.

108. (B) P-3, Q-1, R-4, S-2
Several core principles and methods define the practice of census taking. A de jure census counts individuals at their usual place of residence, while a de facto census records people where they are found on a designated night. Periodicity refers to the requirement that censuses be conducted at regular, defined time intervals. Universality is the essential principle that every single person within a specified territory must be included in the enumeration to ensure a complete and accurate population count.

109. (C) Vital statistics record dynamic events (flows), while a census records static characteristics (stock).
A fundamental distinction between vital statistics and a census lies in the type of population data they capture. A census is a snapshot of the population at a single point in time, providing a record of its static characteristics, such as total count and age distribution, known as stock data. In contrast, vital statistics systems, like birth and death registration, record the dynamic events that occur over time, representing the flow of individuals into and out of the population.

110. (D) The census list of households and areas is used to draw representative samples for other surveys.
One of the most important administrative uses of census data is to provide a reliable sampling frame for other specialized research. Because a census aims for universal coverage, it provides a comprehensive list of all households and small geographical units across the entire country. Researchers use this detailed inventory to select representative samples for more frequent or more in-depth surveys, such as the National Family Health Survey. Without a solid sampling frame from the census, other surveys would struggle to be truly representative.

111. (C) 1, 2, and 3
Basic demographic concepts are those that describe the fundamental characteristics and dynamics of human populations. These include population density, which measures people per unit of area; the growth rate, which tracks how the population size changes over time; and age-sex composition, which describes the distribution of people by gender and age. While tools like Whipple's Index and the Chandrasekaran-Deming formula are important for data appraisal and estimation, they are specialized technical methods rather than core demographic descriptors.

112. (B) Prevailing rumors and misinformation about the side effects of contraceptives.
In the communication process, noise refers to any factor that distorts or interferes with the delivery and reception of a message. In population health campaigns, a common form of noise is the circulation of rumors and misinformation regarding family planning or vaccinations. These false beliefs can create fear and resistance among the target audience, preventing them from accurately understanding or acting on the official information. Overcoming this noise is a major challenge for designing effective demographic and public health communication strategies.

113. (B) Estimate the total number of births in a region using birth records from both a survey and the civil registration system.
The Chandrasekaran-Deming formula is a statistical method used to estimate the actual total of vital events by comparing two independent sources of information. For example, a demographer can apply this formula by matching birth records from a household survey with those from a civil registration system. By identifying the number of events captured by both or only one of the sources, the formula calculates the likely number of events missed by both, providing a more accurate total.

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114. (A) Their stage of demographic transition.
The significant variation in population growth rates across the globe is primarily explained by the different stages of demographic transition in various countries. Nations in the early stages typically have high fertility and declining mortality, leading to rapid growth. More developed countries have reached a stage where both fertility and mortality are low, resulting in very slow or even negative population growth. This transition is driven by socio-economic development, health improvements, and changes in cultural norms regarding family size.

115. (C) National Sample Surveys in India focus exclusively on demographic topics.
The National Sample Surveys in India are inaccurate characterized as focusing only on demography. In reality, these are multi-subject surveys designed to gather a wide range of socio-economic data, including consumption patterns, employment, and education. While they occasionally include demographic modules, their scope is much broader than demography alone. In contrast, the World Fertility Survey and the Demographic Health Surveys are specialized international programs primarily focused on fertility and health, and the NFHS is India's primary source for such indicators.

116. (D) Family
The family is a fundamental social institution defined by relationships based on blood ties, marriage, or legal adoption. It serves as the basic unit of human organization and is of primary interest in population studies because it is the context in which reproduction and socialization occur. The structure and dynamics of families directly influence demographic behaviors such as fertility preferences and decisions about care for the elderly. Understanding the role of the family is essential for analyzing the broader patterns of population change.

117. (A) 1, 2 and 3
Several critical issues affect the quality and reliability of population data. Age heaping, a common form of content error, involves rounding ages to preferred digits. In India, the Civil Registration System is primarily hindered by significant under-registration of vital events. Specialized tools like Myer's Index are used to measure these reporting biases. It is a misconception to assume that scientific surveys like the NFHS are free from sampling errors, as all sample-based data contains inherent variation from the true population value.

118. (B) To facilitate administrative governance and population control.
The historical origins of the Indian census under British colonial rule were primarily driven by administrative and political needs. The census was designed to provide the colonial government with a detailed inventory of the population to facilitate taxation, maintain social order, and manage governance more effectively. By categorizing people by religion, caste, and occupation, the British sought to better understand and control the complex social landscape of the Indian subcontinent. This administrative focus laid the foundation for the modern decennial census.

119. (A) Both Statement I and Statement II are correct.
Population surveys possess a distinct set of strengths and weaknesses compared to a full census. Because they are based on a subset of the population, they are inherently subject to sampling error, which must be statistically managed. However, their smaller scale allows for the collection of much more detailed information on specific topics, such as attitudes toward health or reasons for migration. This depth makes surveys an invaluable tool for in-depth research that a broad census cannot realistically achieve.

120. (A) Significant variations, with southern states generally being further ahead in the demographic transition.
The demographic profile of India is characterized by significant diversity between its states. Southern states, having achieved higher levels of social development and literacy, are generally further along in the demographic transition, exhibiting lower fertility and mortality rates. In contrast, many northern states continue to have higher population growth rates and younger age structures. These interstate variations are critical for national planning, as they necessitate different policy approaches to address the unique demographic challenges faced by various regions.

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121. (C) Greater than 40
The United Nations Age-Sex Accuracy Index provides a numerical score to evaluate the quality of demographic data, with higher scores indicating poorer accuracy. A value exceeding forty is generally considered to signify that the data is highly inaccurate and subject to significant errors such as extensive age heaping or gender-based under-enumeration. Such high values alert demographers that the data must be carefully scrutinized and adjusted using smoothing techniques before it can be used for reliable population analysis or projections.

122. (A) Population Density
The communication process is defined by several core components that ensure the successful transmission of a message. These include the sender who creates the message, the message itself, and the channel or medium through which it travels. While population density is a fundamental demographic concept describing the spatial distribution of people, it is not a functional component of the communication process. Understanding the specific roles of sender, message, and channel is essential for designing effective communication strategies in population studies.

123. (D) Correct for known errors such as age heaping and misstatement.
Adjustment in age data is a vital statistical procedure used to improve the reliability of demographic information. Census and survey data often contain errors such as age heaping, where respondents round their ages to preferred digits, or general misstatements due to lack of knowledge. By applying mathematical formulas and smoothing techniques, demographers can redistribute the population to match more realistic biological patterns. This process ensures that subsequent analysis, such as life tables and population projections, is based on more accurate data.

124. (B) Perceived biological/physical traits, while social groups are based on culture, class, or interest.
In population classification, a fundamental distinction is made between racial and social groups. Racial groups are typically defined by shared physical or biological traits that are perceived as hereditary, such as skin color or facial features. In contrast, social groups are categorized based on shared cultural attributes, economic class, language, or common interests. While both concepts influence demographic behavior, they represent different dimensions of identity, and understanding these distinctions is essential for studying health disparities and social stratification within populations.

125. (A) Both A and R are true and R is the correct explanation of A.
Population studies is recognized as a scientific discipline because it utilizes rigorous and systematic methods of inquiry. Demographers rely on empirical observation, develop and test hypotheses about population change, and use advanced quantitative techniques for analysis. By employing mathematical models and statistical tools to study fertility, mortality, and migration, the field seeks to discover objective patterns and causal relationships. This scientific approach ensures that population analysis is based on evidence and provides a reliable basis for policy and planning.

126. (D) Social Psychology and Sociology
A study exploring the impact of son preference on reproductive decisions represents the intersection of population studies with social psychology and sociology. Demography provides the statistical data on sex ratios and fertility, while sociology and social psychology offer the theoretical frameworks to understand the cultural norms, values, and individual motivations behind these behaviors. This interdisciplinary approach is essential for explaining why certain demographic trends persist and for developing social policies that address deep-seated cultural preferences and their demographic consequences.

127. (A) Civil Registration System (CRS)
In demography, flow data systems are those that record vital events continuously as they occur over time. The Civil Registration System is the primary example, as it involves the permanent and compulsory registration of every birth and death. This provides a record of the dynamic movement of people into and out of the population. In contrast, censuses and surveys are stock systems, which provide a snapshot of the

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population's characteristics at a single, specific point in time.

128. (A) P-4, Q-1, R-2, S-3
Several key surveys and systems provide the essential data for population studies in India. The Sample Registration System offers annual vital rates, while the National Family Health Survey provides detailed health and family welfare indicators. The Reproductive and Child Health Survey was a specialized effort focusing on maternal and child health at the district level. The National Sample Survey is a multi-subject program primarily focused on socio-economic data. Correctly identifying these acronyms is essential for navigating the Indian demographic landscape.

129. (B) 2021
Periodicity is a fundamental principle of census taking, requiring that the enumeration be conducted at regular, pre-defined intervals to ensure data comparability over time. In India, following the established tradition of decennial censuses, the process is carried out every ten years. Therefore, following the census conducted in 2011, the next exercise was naturally expected to occur in 2021. This regular cycle is essential for tracking population trends, evaluating long-term development policies, and providing an updated baseline for administrative planning.

130. (A) The chemical composition of celestial bodies.
The scope of population studies is focused on human populations and the processes that affect them. It includes the analysis of population distribution, density, and the core components of change, such as fertility, mortality, and migration. Furthermore, it examines the complex socio-economic consequences of these trends. In contrast, the study of the chemical composition of celestial bodies belongs to the field of astronomy or chemistry and has no relevance to the scientific analysis of human demographic dynamics.

131. (C) Unique marriage customs and kinship structures.
Tribal cultures in India often possess unique social organizations that directly influence their demographic characteristics. Distinct marriage customs, kinship systems, and rules of residence can lead to patterns of fertility and family formation that vary significantly from the mainstream population. For example, traditional practices regarding the age at marriage or the status of women within the tribe can shape reproductive behaviors. Understanding these cultural factors is essential for demographers to accurately analyze and explain the population dynamics of tribal communities.

132. (B) 1, 2, 4, and 5
Population data appraisal involves several specialized tools and concepts to identify errors. Whipple's Index measures age heaping on specific digits, while Myer's Index provides a summary of digit preference across all numbers. The UN Age-Sex Accuracy Index evaluates overall data consistency through age and sex ratios. It is important to recognize that errors can originate from either respondents or enumerators. However, it is a misconception to think that the Chandrasekaran-Deming formula is used for smoothing age data.

133. (C) To provide reliable estimates of vital rates due to registration deficiencies.
While the Civil Registration System is the oldest method for collecting vital statistics in India, it has historically suffered from significant under-registration and administrative gaps. The Sample Registration System was introduced as a specialized dual-record system to overcome these deficiencies. By using continuous enumeration and independent surveys in a representative sample of units, the SRS provides more accurate and timely annual estimates of birth and death rates, which are essential for monitoring demographic progress and policy evaluation.

134. (A) Both Statement I and Statement II are correct.
The World Fertility Survey was a groundbreaking international research program carried out in the 1970s and early 1980s. Its historical significance lies in being the first major effort to collect fertility data using a standardized methodology across many different countries. This consistency allowed researchers, for the first time, to perform meaningful cross-country comparisons of reproductive behavior and its determinants. The WFS paved the way for the subsequent development of global demographic survey programs used today.

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135. (D) A shift in the population distribution from rural to urban areas.
Social change in India, driven by factors such as industrialization and increased mobility, has significant demographic consequences. One of the most direct impacts is the large-scale movement of people from villages to cities, leading to rapid urbanization. This shift alters the geographical distribution of the population and changes its composition, as urban areas typically exhibit different fertility and mortality patterns compared to rural regions. Understanding this rural-to-urban transition is essential for planning urban infrastructure, services, and social programs.

136. (A) It is an interdisciplinary field drawing theories and methods from sociology, economics, statistics, and biology.
The nature of population studies is fundamentally interdisciplinary, as it seeks to understand human populations through multiple lenses. It integrates biological concepts to study fertility and mortality, statistical methods for quantitative analysis, and economic and sociological theories to explain the drivers and consequences of demographic change. This broad approach is necessary because population dynamics are influenced by a complex interplay of various factors, and no single academic discipline can provide a complete understanding of human demographic phenomena.

137. (A) 1, 4, 2, 3
India's population data collection has evolved through several historical milestones. The tradition of decennial enumeration began with the first synchronous census in 1881. Later, the Sample Registration System was initiated on a pilot basis in the mid-1960s to improve vital statistics. This was followed by the passing of the Registration of Births and Deaths Act in 1969 to provide a legal framework for registration. Finally, the first round of the National Family Health Survey was conducted in the early 1990s.

138. (A) There is a significant time lag between data collection and data availability.
A primary limitation of using decennial census data for contemporary analysis is the significant time delay between the enumeration process and the release of the final results. Because a census involves counting the entire population and meticulously verifying a massive volume of records, data processing is a lengthy exercise. Consequently, the information may be several years old by the time it becomes available to researchers and policymakers, which can be problematic for addressing rapidly evolving social or economic situations.

139. (D) No preference for any terminal digit over others.
Myer's Blended Index provides a summary measure of the quality of age reporting, where a value of zero represents the ideal scenario. An index of zero indicates that there is no systematic preference for any particular terminal digit, and the reported ages are distributed exactly as expected in a high-quality dataset. Higher values on the index signify increasing levels of age heaping or digit preference, alerting demographers that the data may contain significant errors that require correction before further analysis.

140. (B) Population Census
The population census is the only data source designed to provide a complete and universal snapshot of the entire population at a single point in time. Unlike sample surveys, which provide representative estimates, a census attempts to enumerate every individual, offering detailed information on a wide range of characteristics at the smallest administrative levels. This comprehensive scope makes the census an indispensable tool for baseline demographic analysis, administrative planning, resource allocation, and providing a frame for all other specialized research.

141. (C) Norms regarding marriage, family size, and use of contraception.
Religion is a powerful social institution that influences population dynamics primarily by shaping the cultural norms and values of its followers. Religious teachings often provide guidelines on fundamental life events, including marriage, reproduction, and family organization. These values can directly affect attitudes toward the desired number of children and the acceptance of contraceptive methods, leading to distinct patterns of fertility among different religious groups. Understanding these influences

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is essential for demographers to explain variations in population growth and development.

142. (D) The number of events recorded by both systems.
In the Chandrasekaran-Deming formula, the variable 'C' represents the count of vital events that were successfully recorded by both independent data collection systems. The formula works by comparing events captured in one source with those in another to identify matches. This number of common events is crucial for estimating the total number of actual events, including those that might have been missed by both systems. This technique is essential for evaluating and adjusting for under-registration in vital statistics.

143. (B) 1, 2 and 3
India's demographic profile is characterized by several key features that present both challenges and opportunities. These include a large youth population, which creates the potential for a demographic dividend, and significant variations in fertility and mortality rates between different states. Furthermore, the national sex ratio, while improving, remains skewed in many regions. Contrary to any suggestions of a declining population, India continues to experience absolute growth, even as its growth rate gradually slows down due to declining fertility.

144. (B) Data evaluation
The main purpose of using techniques like Whipple's Index is to perform demographic data evaluation. These tools are designed to identify and measure errors in reported data, specifically age heaping or digit preference. By assessing the quality and reliability of the age distribution, demographers can determine if the data is accurate enough for analysis or if it requires mathematical adjustment. Data evaluation is a critical step that ensures subsequent research findings and policy recommendations are based on sound population information.

145. (A) Both A and R are true and R is the correct explanation of A.
For most of human history, global population growth was extremely slow and erratic. This was not because birth rates were low, but rather because they were balanced by equally high mortality rates. Frequent famines, uncontrolled diseases, and widespread warfare acted as powerful checks on population size. It was only with the advent of the Industrial Revolution and subsequent improvements in sanitation, nutrition, and medicine that death rates began to fall consistently, leading to the rapid population growth seen in modern times.

146. (A) An individual's subjective beliefs about the difficulties of using contraception.
In population studies, the concept of perceived barriers is a social-psychological variable that refers to an individual's internal beliefs about the obstacles to using contraception. These barriers can include concerns about potential side effects, religious or social disapproval, or lack of confidence in their ability to use a method correctly. Even if services are physically and economically accessible, these subjective perceptions can significantly influence decision-making and behaviors, highlighting the importance of psychological factors in explaining demographic trends.

147. (A) Both Statement I and Statement II are correct.
Population data sources are categorized into two types based on the kind of information they provide. A census offers a snapshot of the population's characteristics at a single point in time, providing what is known as stock data. In contrast, vital registration systems, such as the Civil Registration System, record events like births and deaths as they occur over time. These records capture the dynamic movement into and out of the population, which is referred to as flow data.

148. (B) P-4, Q-3, R-2, S-1
Social science concepts are essential for understanding demographic patterns. Social change involves long-term shifts, such as urbanization, that alter how populations are distributed. Social institutions like family and marriage regulate demographic events through established norms. Social groups, defined by ethnicity or religion, often exhibit distinct patterns of fertility and mortality. Finally, social structure refers to stratification, such as class hierarchies, which can lead to significant disparities in health outcomes and access to resources within a society.

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149. (C) Provide robust data on the prevalence of micronutrient deficiencies in children.
The Comprehensive Nutrition Survey is a specialized research effort designed to provide detailed and objective data on the nutritional status of young populations. Its primary use is to generate robust evidence on the prevalence of micronutrient deficiencies, such as anemia and vitamin deficiencies, among children and adolescents. By using clinical measurements and biomarkers, this survey provides a level of detail that general health surveys cannot, which is essential for developing targeted public health and nutritional interventions.

150. (B) They can collect detailed information on attitudes and behaviors.
A major strength of large-scale population surveys like the National Family Health Survey is their ability to gather in-depth information that goes beyond simple counts. These surveys can explore individual attitudes, motivations, and specific health-seeking behaviors, which are essential for understanding the drivers of demographic change. While a census provides a universal count, a survey's detailed focus on qualitative and specialized quantitative indicators offers the deeper insights necessary for evaluating the impact of social and health programs.

151. (D) It suffers from significant under-reporting, especially in rural areas.
A primary weakness of vital statistics systems like the Civil Registration System in India is the problem of under-reporting. Many births and deaths, particularly in remote rural areas or among marginalized communities, go unregistered due to limited administrative reach and a lack of public awareness. This under-registration leads to incomplete and potentially biased data, making it difficult to calculate accurate national vital rates. Improving registration completeness remains a major challenge for the Indian statistical system to ensure reliable demographic monitoring.

152. (A) It is created by combining several individual indices into one summary score.
The United Nations Age-Sex Accuracy Index is classified as a composite index because it is constructed by integrating several separate statistical measures into a single, summary value. It combines indices of age ratios for males and females with a measure of the consistency of the sex ratio across different age groups. By providing a single score, the index offers an efficient way for demographers to evaluate the overall quality of population data and identify systematic reporting errors or inconsistencies.

153. (C) Close and interdependent relationship between Population Studies and other social sciences.
A researcher exploring how marriage patterns and religious beliefs interact to influence fertility is demonstrating the close and interdependent relationship between population studies and other social sciences. Demography provides the essential quantitative data, while sociology and religious studies offer the theoretical frameworks to explain the social and cultural drivers of these patterns. This interdisciplinary approach is necessary for a comprehensive understanding of human behavior, as demographic events are always embedded in a complex web of social and cultural influences.

154. (A) Whipple's Index focuses only on digits 0 and 5, while Myer's Index assesses all 10 terminal digits.
Although both Whipple's and Myer's indices are used to measure age heaping, they differ significantly in their level of detail. Whipple's Index is a simpler tool that specifically detects a preference for rounding ages to digits ending in zero and five. In contrast, Myer's Index is a more comprehensive and sophisticated technique that assesses digit preference across all ten terminal digits from zero to nine. This makes Myer's Index a more refined measure for evaluating the overall quality of age reporting.

155. (A) 1, 2, and 3
The history and scope of population data sources in India are marked by several key developments. The Indian Census has a long-standing decennial tradition dating back to the late 19th century. The Sample Registration System was created as a dual-record system specifically to address the reporting deficiencies of the Civil Registration System. Furthermore, the World Fertility Survey served as an important precursor to the global Demographic Health Surveys program. It is a misconception that the NSS focuses primarily on core demography.

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156. (B) There is a need to study population characteristics at both the national and sub-national levels.
The demographic profile of a country like India cannot be understood by looking at national averages alone. Because there is significant diversity in social, economic, and cultural factors across different regions, population characteristics such as fertility, mortality, and literacy vary widely between states. Therefore, it is essential to analyze demographic data at both the national and state levels to identify specific sub-national trends. This detailed information is crucial for formulating effective regional policies and for equitable resource allocation.

157. (C) Statement I is incorrect but Statement II is correct.
In the social sciences, society and culture are distinct but closely related concepts rather than synonymous terms. Society refers to the organized group of people and the system of social relationships and institutions they maintain. Culture, on the other hand, encompasses the shared way of life of that group, including their values, beliefs, and artifacts. Understanding both is essential in population studies, as the social organization of a society and its cultural norms together shape the demographic behaviors of its members.

158. (D) A continuous enumeration and an independent retrospective survey.
The dual-record feature of the Sample Registration System is a methodological safeguard designed to ensure high-quality vital statistics. It involves two independent data collection processes: a resident enumerator provides continuous enumeration of all births and deaths in a sample unit, and an independent supervisor conducts a retrospective survey every six months. The records from both sources are then matched to verify events and identify any omissions. This rigorous approach produces more accurate annual vital rate estimates than a single reporting system.

159. (A) Distinct health-seeking behaviors, marriage patterns, and fertility norms.
Tribal communities in India are of significant interest to demographers because their cultural contexts often lead to unique demographic outcomes. These communities may have distinct marriage customs, fertility norms, and health-seeking behaviors that vary significantly from the national average. Factors such as traditional knowledge systems, geographical isolation, and specific social structures shape how tribal populations interact with health services and make decisions about family size. Understanding these cultural specificities is essential for designing effective and culturally appropriate health and development programs.

160. (B) Incompleteness of registration in a vital statistics system.
The Chandrasekaran-Deming formula is a statistical technique specifically designed to address the problem of under-registration in vital statistics. By comparing records from two independent data sources, such as a survey and a registration system, the formula calculates the number of events that were likely missed by both. This allows demographers to estimate the true total of births or deaths and determine the level of completeness of the registration system, providing more accurate vital rates for analysis and planning.

161. (A) Both A and R are true and R is the correct explanation of A.
Population surveys are an indispensable source of demographic information, complementing the data obtained from censuses. Although based on representative samples, they can investigate specific topics, such as contraceptive behavior or maternal health, in much greater detail than a broad census. Furthermore, surveys can be conducted more frequently, allowing researchers to track changes and evaluate the impact of policies in a more timely manner. This flexibility and depth make sample surveys a vital tool for contemporary demographic research and policy monitoring.

162. (A) The state's need for soldiers, taxpayers, and laborers.
The historical origins of population studies were often closely tied to the practical needs of the state. In many early civilizations and during the emergence of modern nations, governments were primarily interested in counting their populations to assess military strength, identify potential taxpayers, and manage the labor force. These early interests in what was called political

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arithmetic laid the foundation for the scientific field of demography. Over time, the scope has expanded to include a much broader range of social and development goals.

163. (C) Inform policy regarding social security, pensions, and healthcare for the elderly.
The single most significant use of an aging survey is to provide the evidence base for social policies that address the needs of senior citizens. As many populations experience a shift toward older age structures, detailed data on the health, economic security, and living arrangements of the elderly is essential. These surveys inform the design of social security systems, pension plans, and specialized geriatric healthcare services. By understanding the challenges faced by older adults, governments can create more effective support systems.

164. (D) Applying mathematical formulas to minimize irregularities caused by age misreporting.
In demographic data appraisal, smoothing of age data is a statistical procedure used to improve the quality of a reported age distribution. Because respondents often round their ages to preferred digits, raw population data can show artificial spikes and fluctuations. Smoothing involves applying mathematical formulas to redistribute the population more realistically across age groups, following expected biological patterns. This process minimizes the distortions caused by misreporting, providing a more reliable foundation for subsequent demographic analysis, such as constructing life tables.

165. (C) Administrative control and taxation.
The primary motivation for conducting the first modern censuses in the 19th century, including those in colonial India, was to facilitate effective administrative control and taxation. Governments needed an accurate count of their subjects and an understanding of their characteristics to manage governance, maintain order, and collect revenue. These early enumerations were essential tools of statecraft, providing the data necessary for large-scale administrative planning. While the uses of census data have since expanded, their origins were firmly rooted in the needs of government administration.

166. (B) Significant preference for certain terminal digits in age reporting.
Myer's Index is a measure of age reporting quality, where higher values indicate greater inaccuracy. A value above ten for a particular dataset signifies that there is a significant systematic preference for certain terminal digits, a phenomenon known as age heaping. This suggests that many respondents rounded their ages, typically to numbers ending in zero or five, rather than reporting their exact age. Such patterns of misreporting can distort the age structure of the population, signaling that the data requires adjustment before detailed analysis.

167. (D) Population Studies.
Population studies is the scientific field dedicated to the comprehensive study of human populations. Its scope encompasses the analysis of population size, composition, and geographical distribution, as well as the dynamic processes of fertility, mortality, and migration that drive change. By integrating quantitative methods with qualitative insights from various social sciences, population studies explores how these demographic factors interact with the social, economic, and environmental context. This multi-disciplinary approach is essential for understanding the evolution of human societies over time.

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168. (B) The increasing acceptance and practice of inter-caste marriage.
Social change in India often has a direct and measurable impact on demographic patterns. For example, the increasing acceptance of inter-caste marriage represents a significant shift in social norms and traditional structures. This change can influence demographic behavior by altering household formation, social mobility, and eventually fertility patterns as social networks and values evolve. Analyzing such shifts is essential for demographers to understand how the changing social landscape of India shapes the broader trends of population growth and composition over time.

169. (C) NFHS provides more detailed health information, while the census provides a complete population count.
The National Family Health Survey and the Census of India are complementary data sources with distinct strengths. The census is a universal

enumeration designed to provide a complete count of the entire population and its basic characteristics at a point in time. In contrast, the NFHS is a specialized sample survey that gathers much more in-depth and detailed information on health-related indicators, such as nutrition, maternal care, and fertility preferences. This combination of breadth and depth is essential for comprehensive demographic research.

170. (A) Identifying areas with low female literacy to target educational programs.
Census data is a powerful tool for social planning because it provide detailed information at small administrative levels across the entire country. For instance, by analyzing census records, planners can identify specific districts or blocks with low levels of female literacy. This information allows for the targeted allocation of resources and the design of specific educational programs to address regional disparities. This direct application of population data ensures that social interventions are evidence-based and reach the areas where they are most needed.

171. (D) The design and implementation of information, education, and communication (IEC) campaigns.
The relevance of communication concepts to population studies is most clearly seen in the development of public health and family planning initiatives. Effective programs rely on the design of Information, Education, and Communication campaigns to disseminate vital messages, promote healthy behaviors, and influence social norms. By applying communication principles like audience segmentation and channel selection, organizers can ensure that demographic information reaches people in a way that is understandable and persuasive. This strategic use of communication is essential for driving demographic change.

172. (A) 1, 2, and 3
The Civil Registration System in India faces several significant administrative and logistical challenges. These include the widespread under-registration of births and deaths, particularly in remote areas, and frequent delays in the reporting and compilation of data. Additionally, the system often suffers from the misreporting of the cause of death due to a lack of medical certification. Addressing these issues is essential for improving the quality of vital statistics, which are vital for tracking health trends and evaluating social development programs.

173. (A) Both Statement I and Statement II are correct.
Whipple's Index is a specialized demographic tool used to measure a specific type of age misreporting known as age heaping. It assesses the concentration of reported ages ending in zero and five relative to the total number of people in the relevant age range. The index value ranges from one hundred, which indicates no preference for these digits, to five hundred, which would mean that every single person in the range reported an age ending in zero or five.

174. (D) Population aging and low or negative growth.
Many developed countries have reached a late stage in the demographic transition characterized by a unique set of population challenges. High levels of social and economic development have led to consistently low fertility rates, often below replacement level, and increased life expectancy. Consequently, these nations are experiencing rapid population aging, where a growing proportion of people are elderly. This shift results in very slow, stagnant, or even negative population growth, necessitating new policies regarding labor supply, social security, and geriatric healthcare.

175. (A) The NFHS is the name given to the DHS program when implemented in India.
The National Family Health Survey is the Indian official version of the international Demographic Health Surveys program. While the global DHS provides the standardized methodology, questionnaires, and technical framework used in many developing countries, the NFHS is tailored to the specific context of India. This relationship ensures that the data collected in India is of high quality and internationally comparable, while still addressing the unique health and demographic priorities of the Indian government and its various states.

176. (B) 1, 3, 2, 4
Handling population data involves a logical progression of steps to ensure accuracy and utility. It begins with data collection through censuses or surveys. The raw data must then be

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rigorously evaluated for errors of coverage and content. If inaccuracies such as age heaping are identified, demographers apply adjustment and smoothing techniques to improve the data quality. Only after these evaluative and corrective steps is the refined information disseminated to researchers and policymakers for analysis and planning purposes.

177. (B) The network of social relationships and obligations that influence marriage and residence.
Kinship is a fundamental concept in population studies because it defines the system of social relationships and mutual obligations based on blood ties and marriage. This network shapes the structure of families and households and dictates the rules for marriage and residence after marriage. These kinship patterns directly influence demographic behaviors, such as the timing of marriage and desired family size. Understanding the kinship system is essential for explaining why different societies exhibit distinct patterns of reproductive behavior and social organization.

178. (A) Produce relatively accurate annual estimates of fertility and mortality rates.
A major strength of the Sample Registration System is its ability to provide timely and reliable demographic indicators at the national and state levels in India. By using a dual-record system in a representative sample of units, the SRS generates relatively accurate annual estimates of birth and death rates. This frequent data is essential for monitoring demographic trends, evaluating the impact of health and family welfare programs, and providing updated population parameters that the decennial census cannot offer between counts.

179. (C) Social-psychological concepts in demography.
A researcher exploring how individual values and beliefs regarding family size evolve over generations is focusing on social-psychological concepts within the field of demography. This approach examines the internal motivations, perceptions, and cognitive processes that drive reproductive behavior. By understanding how social and cultural shifts influence individual decision-making, demographers can gain a deeper insight into the underlying causes of fertility trends that are not captured by purely statistical analysis. These psychological factors are essential for explaining complex demographic phenomena.

180. (D) The completeness of registration.
The Chandrasekaran-Deming formula is a statistical tool used to evaluate the efficiency of vital registration systems. By comparing records from two independent data sources, the formula calculates the number of events that were likely missed by both systems. This leads to an estimate of the true total number of actual births or deaths, allowing demographers to determine the level of completeness of the registration system. This assessment is essential for adjusting reported vital rates and ensuring more accurate population monitoring.

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181. (A) Both A and R are true and R is the correct explanation of A.
The evaluation and adjustment of population data are essential steps in demographic analysis because no large-scale data collection effort is perfectly accurate. Censuses and surveys inevitably contain various errors, including coverage errors where people are missed or double-counted, and content errors where characteristics like age are misreported. By systematically identifying these inaccuracies and applying mathematical adjustments, demographers ensure that the final population data is as reliable as possible, providing a sound basis for scientific research and policy planning.

182. (B) The increasing acceptance and practice of inter-caste marriage.
Social change in India often has a direct and measurable impact on demographic patterns. For example, the increasing acceptance of inter-caste marriage represents a significant shift in social norms and traditional structures. This change can influence demographic behavior by altering household formation, social mobility, and eventually fertility patterns as social networks and values evolve. Analyzing such shifts is essential for demographers to understand how the changing social landscape of India shapes the broader trends of population growth and composition over time.

183. (D) A textbook on demography.
Primary sources of population data are those where information is collected directly from the population through systematic enumeration or registration processes. Examples include the population census, the Sample Registration System, and specialized surveys like the National Family Health Survey. In contrast, a textbook on demography is a secondary source. While it provides valuable analysis, interpretation, and synthesis of population information, it does not involve the original collection of individual demographic records from the field or official registry.

184. (C) P-3, Q-4, R-2, S-1
Population studies intersects with various social sciences to provide a holistic understanding of human groups. Sociology helps demographers analyze the impact of social institutions like the family on fertility. Psychology offers insights into individual attitudes and motivations in reproductive choices. Economics is essential for studying the demographic dividend and its relationship to labor supply. History provides the long-term context necessary for understanding population trends and their underlying causes over centuries. This interdisciplinary approach is vital for comprehensive demographic analysis.

185. (C) Coverage error
A coverage error occurs in a demographic survey when the enumeration process fails to accurately count all eligible individuals or households. In this scenario, where parents fail to report a child who lives elsewhere, the result is an undercount of the total number of children. This type of error distorts the overall population size and its composition. Demographers must identify and adjust for such omissions to ensure that the data provides a reliable representation of the entire population being studied.

186. (A) Demographic behaviors are embedded in and shaped by social norms, values, and cultural contexts.
The concepts of society and culture are central to population studies because demographic events—such as birth, death, and migration—are never purely biological. These behaviors are deeply embedded in and guided by the social norms, values, and cultural frameworks of the communities in which they occur. A society's organization and its cultural beliefs about family, health, and mobility dictate individual and group decisions. Therefore, understanding these social and cultural determinants is essential for demographers to explain variations in population dynamics.

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187. (A) 1, 2, and 3
The Demographic Health Surveys program is a global initiative characterized by its standardized methodology. It receives international funding and provides technical assistance to countries to collect high-quality data. By using uniform questionnaires, it ensures that results are comparable across different nations, focusing primarily on fertility, maternal health, and nutrition. It is important to note that these surveys are typically conducted in developing countries and are designed to complement, rather than replace, the national population census.

188. (B) Content error
When an enumerator records inaccurate information for an individual, such as guessing an age instead of asking for it, this introduces a content error into the demographic data. Content errors involve the incorrect recording of specific characteristics, which can distort the analysis of the population's composition, even if the total population count remains correct. This type of error, often stemming from poor training or respondent difficulty, is a significant concern in large-scale enumerations that demographers must identify during data evaluation.

189. (B) Both Statement I and Statement II are incorrect.
The relative advantages of censuses and sample surveys are often misunderstood. A census, by definition, aims for a full count of the entire population, while a sample survey gathers information from only a representative subset. Conversely, a census is an extremely expensive and slow undertaking due to its massive scale. In contrast, sample surveys are more cost-effective and can be conducted more quickly and frequently, providing detailed data on specific topics that a broad census cannot realistically cover.

190. (D) The causes and consequences of population phenomena.
The definition of population studies has evolved significantly from its early origins. While it once focused almost exclusively on the statistical measurement of population size and growth, the field has expanded to include the analysis of the underlying causes and the broader socio-economic consequences of demographic phenomena. Modern demographers explore how social, economic, and environmental factors influence fertility, mortality, and migration, and how these population changes in turn impact human development, social organization, and ecological sustainability.

191. (A) Significant diversity exists in culture and demographic indicators among tribal groups.
From a demographic perspective, the tribal population in India is characterized by significant internal diversity rather than being a homogenous group. Different tribal communities possess distinct cultural norms, languages, and social organizations, which lead to varying patterns of fertility, mortality, and health-seeking behavior. These groups live in diverse geographical regions and experience social change at different rates. Recognizing this heterogeneity is essential for demographers to accurately analyze tribal population dynamics and for policymakers to design effective, culturally sensitive interventions.

192. (B) Project the need for geriatric healthcare services.
An important use of the data collected in an aging survey is to project the future demand for specialized geriatric healthcare services. As populations undergo a demographic shift toward older age structures, it is essential for health planners to understand the specific health status, chronic disease prevalence, and functional limitations of the elderly. This information allows for the development of targeted healthcare infrastructure, the training of geriatric specialists, and the creation of social support systems that address the unique needs.

193. (B) Being a sample, it may not provide reliable estimates for small geographical areas.
A primary limitation of the Sample Registration System is inherent in its design as a sample-based data source. While it provides very reliable estimates of vital rates at the national and state levels in India, its results may not be statistically sound for very small geographical units like districts or individual villages. For such detailed local data, planners must often rely on the decennial census or other specialized localized surveys. This limitation highlights the need for a multi-faceted approach to population monitoring.

194. (A) History of population in India and the world.
The demographic transition—the shift from a regime of high birth and death rates to one of low birth and death rates—is the central concept for understanding the history of population growth. This transition explains how improvements in public health and economic development lead to falling mortality, followed eventually by declining fertility. Analyzing this process is essential for demographers to track the growth trajectories of different nations, including the historical phases of population change observed in India and across the global community.

195. (C) An established set of norms and structures that guide social life and behavior.
In population studies, a social institution is defined as a stable and established set of norms, values, and structures that organize social life and guide human behavior. Key institutions like family, marriage, and religion are critical because they dictate the patterns of social interaction and reproduction. By shaping individual and group decisions regarding life events, social institutions directly influence demographic processes. Understanding these institutional frameworks is essential for demographers to explain the underlying social causes of observed population trends.

196. (D) Age ratios and sex ratios should change in a regular and predictable manner.
The United Nations Age-Sex Accuracy Index evaluates population data quality based on the fundamental biological and statistical principle that age and sex distributions should follow smooth and regular patterns. In any stable population not affected by major disturbances like war or sudden mass migration, the ratios of males to females and the transitions between age groups should be predictable. Significant deviations from these expected patterns, detected

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by the index, alert demographers to the presence of errors such as age misreporting.

197. (A) 1, 2 and 3
Demographic data appraisal utilizes several specialized techniques to identify inaccuracies. Whipple's Index specifically detects age heaping on digits zero and five, while Myer's Index provides a summary of preference for all terminal digits. The UN Age-Sex Accuracy Index is a composite score that evaluates overall data quality. It is crucial to understand that while these tools identify errors like heaping, the Chandrasekaran-Deming formula is used for estimating the completeness of registration systems rather than adjusting age data.

198. (B) Including every person residing in the country at a specified time.
The coverage of a census refers to its fundamental goal of achieving a universal enumeration of the entire population. This principle of universality means the census must attempt to count every individual residing within the defined territory of a country at a specific reference point. Achieving complete coverage is essential for the accuracy and reliability of the census data, as it provides the total population count necessary for administrative planning, fair electoral representation, and scientific demographic analysis across all regions.

199. (A) Both Statement I and Statement II are correct.
The National Sample Surveys in India are an essential source of detailed socio-economic information. Conducted in successive rounds, these multi-subject surveys are designed to provide data on a wide variety of topics. A major and consistent theme throughout the history of the NSS has been the collection of robust data on household consumer expenditure, employment, and unemployment. This information is vital for policymakers to monitor economic well-being, assess poverty levels, and formulate development strategies for various sectors of the economy.

200. (A) Symbiotic.
The relationship between population studies and other social sciences is best described as symbiotic, characterized by mutual influence and interdependence. Demography provides the essential quantitative data on population size and structure that fields like sociology, economics, and psychology need for their analyses. Conversely, these other disciplines offer the theoretical frameworks to explain the social, psychological, and economic drivers behind demographic change. This interdisciplinary collaboration enriches our overall understanding of human society and its complex, interconnected dynamics.

201. (C) To obtain a complete and accurate count of the population and its characteristics.
The primary objective of a decennial population census is to achieve a universal and accurate enumeration of every person in a country. Beyond just counting heads, a census also gathers detailed information on the demographic, social, and economic characteristics of the population at a specific point in time. This complete snapshot is essential for administrative governance, resource allocation, and providing the foundational baseline data needed for scientific research and long-term development planning at all levels of government.

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202. (A) A person deliberately misreporting their income.
Errors in demographic data can originate from several sources during the collection process. When a respondent provides incorrect information, such as deliberately misreporting their income or age, this is a source of error originating from the person being enumerated. These inaccuracies can be caused by social stigma, fear of taxation, or a lack of precise knowledge. Demographers must identify these reporting biases to evaluate the quality of the data and apply necessary adjustments to ensure that the analysis remains reliable.

203. (D) Fertility, Mortality, Migration.
The size and growth of any human population are directly governed by three fundamental demographic processes. Fertility adds individuals through births, while mortality removes them through deaths. Migration involves the physical movement of people into or out of a specific territory, further altering the total count. These three components are the core drivers of population change; all other factors—social, economic, or cultural—influence population size

only by affecting the rates and patterns of these basic biological and physical events.

204. (A) Both A and R are true and R is the correct explanation of A.
The Civil Registration System is, in principle, the ideal source for vital statistics because it is designed to provide a continuous and permanent record of demographic events. By legally requiring the compulsory registration of every birth and death as it occurs, the system creates a dynamic account of population change. This legal record is not only essential for administrative purposes but also provides the most detailed data for tracking health trends and evaluating social programs over long periods.

205. (C) Serving as a legal proof of citizenship for individuals.
Population surveys like the National Family Health Survey are designed for research and policy purposes rather than individual administration. Their uses include providing essential data for policymaking, evaluating the impact of social programs, and tracking long-term changes in health and demographic indicators. These surveys offer insights into behaviors and service utilization at the aggregate level. However, because they are based on representative samples and are confidential, they cannot be used to serve as legal proof of individual citizenship status.

206. (D) Computes a weighted total of populations to avoid bias from declining age groups.
A blended index, such as Myer's Index, is named for its specialized mathematical approach to evaluating age data. In a population where the number of people naturally declines as age increases, simple counts can misrepresent the extent of digit preference. To correct for this, the index computes a weighted total of populations ending in each digit across different age groups. This blending technique removes the bias caused by the underlying age structure, providing a more accurate measure of systematic reporting errors or heaping.

207. (B) P-4, Q-1, R-3, S-2
India utilizes several distinct sources to gather comprehensive population information. The decennial census provides a complete count and profile of the population at a point in time. The Sample Registration System utilizes a dual-record approach to generate annual estimates of vital rates. The National Family Health Survey is a large-scale sample survey offering detailed health and nutrition indicators. Finally, the Civil Registration System is the administrative process for the continuous legal registration of vital events like births and deaths.

208. (B) Social change and its demographic consequences.
Investigating how the transition from joint to nuclear family structures in India impacts fertility and geriatric care is a prime example of studying social change and its demographic consequences. As traditional social organizations evolve due to urbanization and modernization, the norms and support systems within families shift. These changes directly influence demographic behaviors such as reproductive choices and the availability of care for the elderly. Analyzing these interconnections is essential for understanding how the evolving social landscape shapes the broader population dynamics.

209. (B) Did not include a strong component on maternal and child health beyond fertility.
Although the World Fertility Survey was a pioneering effort in international demographic research, it had specific limitations. Its primary focus was on human fertility and its immediate determinants, which meant it did not include a comprehensive range of indicators related to maternal and child health or nutrition. This gap led to the subsequent development of the Demographic Health Surveys program, which expanded the scope to provide the more holistic health data that is essential for modern public health and development planning.

210. (A) It combines separate scores for age ratios and sex ratios into a single value.
The United Nations Age-Sex Accuracy Index is a composite statistical tool used by demographers to evaluate the overall quality of population data. It functions by integrating individual scores derived from the analysis of age ratios and sex ratios across five-year age groups. By combining these measures into a single numerical value, the index provides an efficient way to detect systematic errors, such as age heaping or gender-

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based under-enumeration, and to assess the consistency of the reported population structure.

211. (C) 1, 2 and 3
Understanding communication concepts is highly relevant to population studies, particularly for improving public health outcomes. This includes analyzing how health messages are disseminated, understanding the media's role in shaping social norms regarding family size, and designing effective Information, Education, and Communication materials for family planning. These activities utilize communication strategies to drive demographic change. In contrast, calculating the crude death rate is a purely statistical task within demography that does not directly involve the application of communication theory or concepts.

212. (C) Statement I is incorrect but Statement II is correct.
Population studies is far more than a narrow field focused only on mathematical calculations. While it relies on quantitative methods and statistics for analysis, it is fundamentally a multi-disciplinary science. It intersects with sociology, economics, psychology, and public health to understand the complex human behaviors behind demographic trends. By integrating insights from these various fields, demographers can explain the causes of population change and analyze its broad impacts on social organization, economic development, and individual well-being across different societies.

213. (C) The basis of counting people (where they are found vs. where they usually live).
The fundamental difference between a de facto and a de jure census lies in the criteria used to enumerate individuals. A de facto census counts people based on their physical location at a specific time, usually on the designated census night. In contrast, a de jure census aims to record individuals according to their usual place of residence, regardless of where they are on the day of enumeration. This distinction is important for demographers to accurately represent population distribution and spatial characteristics.

214. (B) Whipple's Index.
Social institutions are established sets of norms and structures—such as family, marriage, and religion—that organize social life and influence individual behaviors. These institutions are critical in population studies because they shape decisions regarding reproduction, health, and mobility. In contrast, Whipple's Index is not a social institution; rather, it is a statistical technique used by demographers for data appraisal. It is specifically designed to measure the quality of reported age data by detecting age heaping or digit preference.

215. (D) The Industrial Revolution.
The global population experienced a dramatic and unprecedented acceleration in growth following the Industrial Revolution. Before this period, high birth rates were largely balanced by high mortality. However, the industrial era brought significant advancements in agriculture, sanitation, nutrition, and medicine, which led to a sustained and rapid decline in death rates across many regions. This historical shift initiated the demographic transition, where populations began to grow much more quickly than at any other point in human history, fundamentally changing the global demographic landscape.

216. (A) Aging Survey.
A researcher seeking detailed information on the health, social, and economic conditions of India's elderly population would find an aging survey to be the most appropriate and specific source. Unlike general demographic surveys or those focused on children and reproductive health, an aging survey is specialized for individuals aged sixty and over. It gathers detailed data on geriatric health issues, living arrangements, and the financial security of senior citizens. This information is essential for formulating effective policies regarding social security and geriatric care.

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217. (A) 1, 2, and 3
Comprehensive demographic research relies on diverse data sources, each with unique characteristics. A population census provides a snapshot of characteristics at a point in time, known as a stock measure. Vital registration systems continuously record events, representing a flow measure. Sample surveys collect detailed data from a representative subset of the population. It is a misconception to think that censuses are low-cost or that surveys are free from

errors; both require rigorous evaluation to ensure the reliability of the population information.

218. (A) Data evaluation and adjustment technique.
The Chandrasekaran-Deming formula is a specialized technique used by demographers for the evaluation and adjustment of vital registration data. It is not a method for original data collection but rather a statistical tool applied after the fact to assess how completely events are being captured. By comparing two independent sources, it estimates the number of missed events and allows for the adjustment of reported birth and death rates. This process ensures that demographic analysis is based on more accurate and comprehensive information.

219. (A) Both A and R are true and R is the correct explanation of A.
The study of tribal populations is essential in Indian demography because these communities often exhibit unique demographic profiles. These profiles are shaped by specific cultural and social contexts, leading to distinct patterns of fertility, mortality, and health-seeking behavior. Factors such as traditional customs regarding marriage and family organization, alongside geographical isolation, contribute to these variations. Analyzing these differences allows demographers to better understand the impact of culture on population dynamics and helps policymakers design more effective, culturally appropriate development programs.

220. (B) A large proportion of the population in young, working-age groups.
The demographic dividend refers to the economic growth potential that results from a shift in a population's age structure, specifically when the share of the working-age population is larger than the non-working-age share. In India's current scenario, a large proportion of individuals are in young, productive age groups with fewer dependents. If this youth population is well-educated and employed, it can drive significant economic development. This transition is a key focus for planners to capitalize on the country's changing demographic profile.

221. (C) The information collected is often limited in depth on any single topic.
A primary limitation of population census data is the lack of depth on any specific subject. Because a census aims for universal enumeration and must collect a wide range of basic information from millions of people, it cannot include the detailed or specialized questions found in sample surveys. While it provides an essential baseline for population size and distribution, it may not offer the in-depth insights into attitudes, motivations, or clinical health indicators that are necessary for detailed research on specific social or health issues.

222. (D) Content Error.
A content error occurs when the characteristics of an individual are recorded inaccurately during a demographic count. If an enumerator records a respondent's age as thirty-five when their actual age is thirty-seven, the resulting data point is incorrect. While the person has been successfully counted, the information about them is flawed. These errors can distort the analysis of the population's age structure and other characteristics, necessitating data appraisal and adjustment techniques like smoothing to improve the overall quality of the population record.

223. (A) How stratification by caste or class leads to inequalities in healthcare access.
Social structure is relevant to population studies because it creates hierarchies that dictate how resources are distributed within a society. Stratification based on caste, class, or other social categories leads to significant inequalities in access to nutrition, education, and healthcare services. These structural disparities directly influence demographic outcomes, resulting in variations in health status, mortality rates, and life expectancy across different social groups. Analyzing these factors is essential for explaining why demographic trends are not uniform across all segments of the population.

224. (B) Chandrasekaran-Deming formula.
The Chandrasekaran-Deming formula is the specific demographic method used to evaluate the completeness of vital registration data. By comparing the records from two independent data sources covering the same population, the

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formula estimates the total number of events, including those likely missed by both systems. This provides a measure of how effectively the registration system is capturing births and deaths. Unlike indices that measure age misreporting, this formula focuses on the quantitative accuracy of the event recording process.

225. (B) A couple's aspiration for their children's well-being leading to smaller families.
The study of social-psychological concepts in population studies involves exploring how individual motivations and goals influence demographic behavior. A primary example is when a couple's aspirations for their children's future education and well-being lead them to choose smaller families. This personal decision-making process, driven by internal values and expectations, is a critical factor behind declining fertility rates. Understanding these psychological drivers is essential for explaining demographic shifts that are not purely determined by economic conditions or biological factors alone.

226. (A) Both Statement I and Statement II are correct.
The Sample Registration System is the primary source for reliable annual vital rates in India at both the national and state levels. Its accuracy is maintained through a unique dual-record methodology. This process involves a resident enumerator who performs continuous recording of all births and deaths in a sample unit, supplemented by an independent survey conducted every six months by a supervisor. By matching and verifying these two separate records, the SRS ensures high-quality vital statistics that are essential for monitoring demographic trends.

227. (C) It marked the beginning of a sustained and rapid population growth phase.
In the demographic history of India, 1921 is known as the Year of the Great Divide because it marks a fundamental shift in population growth patterns. Prior to this, growth was slow and stagnant as high birth rates were offset by high mortality from famines and disease. After 1921, improvements in health and nutrition led to a definitive and sustained decline in mortality, while fertility remained high. This initiated a period of rapid acceleration that represents a classic stage in the demographic transition.

228. (D) The system of relationships based on blood ties and marriage.
In the field of population studies, kinship refers to the organized system of social relationships and mutual obligations established through blood ties and marriage. This concept is important because kinship structures define the organization of families and households, influencing demographic behaviors such as marriage rules, rules of residence, and patterns of childbearing. By shaping these social frameworks, kinship directly affects the size and composition of populations. Understanding these systems is essential for demographers to explain variations in reproductive behavior and social support.

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229. (A) P-2, Q-4, R-1, S-3
Various terms describe the types of errors and adjustments in demographic data. Content error involves the incorrect recording of specific characteristics like age. Coverage error refers to the omission or duplication of individuals in a count. Age heaping is a common reporting bias where respondents round their ages, typically to numbers ending in zero or five. Data smoothing is the statistical process of adjusting these reported age distributions using mathematical formulas to minimize irregularities and provide a more accurate representation for analysis.

230. (B) Evaluate the performance of national health and family welfare programs.
A key use of the National Family Health Survey in India is to provide the high-quality data necessary for evaluating the impact of public health and family welfare initiatives. By gathering detailed information on maternal health, child nutrition, and contraceptive use, the survey allows policymakers to track progress against national goals. The findings from the NFHS are essential for identifying gaps in service delivery, assessing the reach of various programs, and making evidence-based adjustments to social and health policies across the country.

231. (D) Human fertility and its determinants.
The World Fertility Survey was a landmark international research program primarily focused on human fertility and the factors that influence it. Conducted in the 1970s and 1980s, it aimed to provide a comprehensive and standardized account of reproductive behavior

across many different nations. By exploring the socio-economic and cultural determinants of family size, the WFS offered the first large-scale, comparable data used to understand global fertility trends. This pioneering work laid the foundation for subsequent global demographic health survey programs.

232. (A) Significant under-registration of births and deaths.
A primary challenge facing the Civil Registration System in India is the significant under-registration of vital events. While registration is legally mandated, many births and deaths go unrecorded, particularly in rural areas or among marginalized groups, due to a lack of administrative reach and public awareness. This incompleteness makes it difficult to use CRS data for calculating accurate national vital rates. Improving registration completeness is a major goal for demographers to ensure a more reliable and continuous record of India's population change.

233. (C) Myer's Index.
Myer's Index is a sophisticated statistical technique specifically designed to assess digit preference or age heaping in population data. It is a comprehensive tool because it measures the preference or avoidance for all ten terminal digits from zero to nine. By providing a summary index of overall reporting accuracy, Myer's Index allows demographers to identify systematic biases in age reporting. This tool is essential for data appraisal, helping researchers determine the reliability of a reported age structure and decide if adjustment is necessary.

234. (A) Analysis of the interplay between population and socio-economic factors.
The nature and scope of population studies have broadened significantly over time. While the field originally focused on simple population counts, it now encompasses a much wider analysis of the interplay between demographic trends and socio-economic factors. Modern demographers explore how population size and structure influence economic development, social organization, and health, and conversely, how social and economic changes shape fertility, mortality, and migration. This expanded focus reflects the complex and interconnected nature of human populations in a rapidly changing world.

235. (A) 2, 1, 4, 3
The process of demographic data handling follows a logical sequence of evaluation and correction. It begins with obtaining raw data, such as single-year age records from a census. Demographers then use specialized tools like Myer's Index to identify specific errors like age heaping. Next, a broader assessment of overall consistency is performed using composite measures like the UN Age-Sex Accuracy Index. Finally, if significant inaccuracies are found, mathematical smoothing techniques are applied to refine the data for use in analysis.

236. (B) Religion and population dynamics.
A study exploring how religious beliefs about the sanctity of life influence attitudes toward abortion represents the intersection of religion and population dynamics. Demography provides the statistical context of reproductive health, while religious studies offer the theoretical framework to understand the moral and cultural values that guide individual behaviors. Understanding these influences is essential for demographers to explain variations in health outcomes and to design programs that are sensitive to the deeply held beliefs that shape decisions about reproduction and family size.

237. (C) 1, 2, 3, and 4
Population researchers utilize multiple data sources, each with specific strengths and limitations. Censuses are essential for universal coverage but are expensive and have a long time lag. In India, the Sample Registration System provides more reliable annual vital rates than the Civil Registration System, which is intended as a continuous source of dynamic data. Surveys like the NFHS offer in-depth information but are subject to sampling error. It is a misconception to view Whipple's Index as a survey; it is a data appraisal tool.

238. (A) Both A and R are true and R is the correct explanation of A.
Social change, particularly the empowerment of women, is a critical variable in population studies because of its profound demographic impact. Higher levels of female education and increased

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autonomy are strongly correlated with lower fertility rates and improved health outcomes for both mothers and children. As women gain more control over their lives and reproductive choices, they often choose smaller families and utilize healthcare services more effectively. Therefore, understanding shifts in gender roles is essential for demographers to analyze and predict future population trends.

239. (A) Changes in population size, growth, and composition over time.
Analyzing population trends involves the systematic study of how the size, growth rate, and composition of a population evolve over time. Demographers examine historical data to identify patterns in fertility, mortality, and migration that drive these changes. This analysis allows for a better understanding of the demographic transition and provides the necessary context for predicting future population trajectories. Tracking these trends is essential for long-term planning in sectors such as healthcare, education, and social security to ensure that future needs are met.

240. (B) Sampling error.
A sampling error in a demographic survey represents the inherent difference between the survey estimate and the actual true value in the entire population. This error occurs because data is collected from only a subset of the population, and the results can vary depending on which specific individuals are included in the sample. While researchers use scientific methods to minimize this variation, some sampling error always remains. Understanding and measuring this error is essential for the statistically sound interpretation and generalization of survey results.

241. (B) Norms, values, and beliefs that influence behaviors related to marriage.
Culture plays a fundamental role in shaping demographic outcomes by providing the shared norms, values, and beliefs that guide human behavior. These cultural factors strongly influence decisions regarding the age at marriage, the desired number of children, and the use of reproductive health services. In population studies, understanding the cultural context is essential for explaining variations in fertility and mortality rates across different societies. Culture defines the social framework within which demographic events occur, making it a critical determinant of broader population dynamics.

242. (A) Usual place of residence.
The Indian census aims to be a de jure enumeration, which means it strives to count every individual based on their usual place of residence. This approach provides a consistent and accurate representation of the population's geographical distribution across the country. By focusing on where people normally live, rather than where they happen to be on a single night, the de jure count offers a more useful baseline for administrative planning, fair electoral representation, and the equitable allocation of national resources.

243. (C) Statement I is incorrect but Statement II is correct.
The Sample Registration System in India does not rely primarily on hospital records but uses a specialized dual-record methodology. This process involves a part-time resident enumerator who performs continuous recording of all births and deaths in a sample unit. This is supplemented by an independent retrospective survey conducted every six months by a full-time supervisor-surveyor. By matching and verifying these two independent records, the SRS ensures high-quality vital statistics that are more accurate and timely than those from the traditional civil registration system.

244. (D) Reduce the fluctuations caused by age misreporting in the dataset.
The primary objective of applying mathematical smoothing techniques to age data is to reduce artificial fluctuations caused by misreporting. Because respondents often round their ages to preferred digits, raw population data can show unrealistic spikes. Smoothing redistributes the population to match more natural biological patterns, providing a more reliable age distribution. This refined data is essential for demographers to perform accurate analysis, such as constructing life tables or creating population projections, ensuring that planning is based on high-quality information.

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245. (C) It is more cost-effective and can be conducted more frequently.
A key advantage of population surveys compared to a full census is their cost-effectiveness and flexibility. Because surveys collect data from only a representative sample of the population, they require significantly fewer resources and less time to implement. This efficiency allows surveys to be conducted much more frequently, providing timely updates on health and demographic indicators. Furthermore, the smaller scale enables the collection of much more detailed and specialized information on specific research topics that a universal census cannot realistically cover.

246. (B) Comprehensive population studies.
A researcher studying how individual attitudes, beliefs, and values influence the decision to migrate is exploring an essential part of comprehensive population studies. While formal demography focuses on the statistical counts of movement, this broader approach examines the underlying psychological and social drivers of demographic behavior. By understanding why people choose to migrate, demographers can gain a deeper insight into the complex causes of population redistribution. This interdisciplinary perspective is vital for a holistic understanding of how human agency shapes demographic trends.

247. (D) Young age structure.
A population with a high proportion of young people and a relatively small percentage of elderly individuals is described as having a young age structure. This profile is typical of countries with high fertility and declining mortality, often seen in the early to middle stages of the demographic transition. Such an age structure creates a wide-based population pyramid and implies a high level of child dependency. This scenario presents both a challenge for providing education and healthcare and an opportunity for a future demographic dividend.

248. (A) Inadequacies and under-registration of the Civil Registration System.
The implementation of the Sample Registration System in India was a direct response to the persistent inadequacies and under-registration of the Civil Registration System. While the CRS is legally mandated, it often fails to provide a complete or timely record of births and deaths. To address this gap, the SRS was developed as a specialized dual-record system in a representative sample of units. By generating more reliable and timely vital rates, the SRS provides the accurate demographic data necessary for national monitoring and policy evaluation.

249. (C) Conducted on a decennial basis.
A defining and essential feature of the Indian census is that it is conducted on a regular decennial basis, meaning every ten years. This established periodicity ensures that the population data is comparable over time, allowing demographers to track long-term trends and planners to evaluate development policies. This massive administrative exercise aims for the universal enumeration of the entire population, providing the foundational baseline data on demographics and social characteristics that is indispensable for effective governance, fair representation, and scientific population research.

250. (A) Key indicators such as infant mortality, fertility, and vaccination coverage.
The National Family Health Surveys in India are an invaluable source of high-quality data on a wide range of demographic and health-related subjects. These large-scale sample surveys provide essential information on key indicators such as infant and child mortality, fertility trends, maternal care, and immunization coverage. By offering detailed insights into health-seeking behaviors and outcomes, the NFHS allows policymakers to evaluate the effectiveness of family welfare programs and to identify specific gaps in the healthcare system across various states and social groups.

251. (B) Its integration of concepts and methods from various social sciences.
Population studies is an interdisciplinary field because it borrows theoretical frameworks and methodological instruments from various social sciences. Its primary nature and expansive scope are established by integrating diverse concepts. This multifaceted approach allows for a comprehensive analysis of demographic phenomena, considering factors like societal norms and cultural values that influence fertility, mortality, and migration patterns across human populations.

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252. (A) The differences in reproductive behaviors across societies.
Culture plays a vital role in demographic research by explaining why specific reproductive behaviors differ significantly between various societies. Examining cultural values and societal norms helps researchers understand variations in fertility patterns. This perspective is essential because demographic outcomes are deeply embedded in the social structure, making cultural insights indispensable for interpreting demographic shifts and the underlying motivations behind them.

253. (C) Population Studies and Sociology.
The relationship with sociology is particularly significant for understanding demographic phenomena because these processes are profoundly integrated within the broader social structure. Concepts derived from sociology, such as social groups and cultural values, are essential for explaining variations in fertility and mortality. This deep connection ensures that population dynamics are studied as products of societal influences and norms.

254. (D) They explain how individual motivations influence demographic decisions.
Social-psychological concepts are essential for demography as they explain the ways individual attitudes, beliefs, and motivations shape personal decisions regarding family size and health-seeking behaviors. By bridging the gap between societal structures and individual actions, these concepts provide insights into how people perceive the costs and benefits of children, ultimately influencing broader demographic trends and various reproductive behaviors.

255. (C) It is crucial for disseminating information related to family planning and health.
Communication is a vital concept in the study of population dynamics because it facilitates the dissemination of critical information regarding family planning and public health. Beyond simple information delivery, it represents a complex social process necessary for influencing health behaviors. Effective communication helps in spreading awareness about reproductive health, which is essential for managing population growth and promoting healthy behaviors.

256. (B) By establishing norms that affect fertility and population growth.
Marriage functions as a fundamental social institution that directly impacts fertility and population growth through established norms regarding the age at marriage and the stability of unions. These societal standards determine reproductive outcomes by regulating when individuals begin childbearing and the duration of their exposure to the risk of pregnancy, thus significantly influencing the overall demographic growth of a population.

257. (D) The decisions regarding childbearing and migration.
Family structures, whether nuclear or extended, play a critical role in shaping essential demographic decisions. These institutional frameworks influence the desired number and spacing of children within a household. Additionally, family arrangements affect patterns of intergenerational support and migration choices. By determining the social environment for reproduction and mobility, family structures serve as a primary regulator of local population dynamics.

258. (A) It provides a moral framework that guides beliefs about procreation and health.
Religion provides a comprehensive moral and ethical framework that significantly guides individual beliefs and practices concerning procreation, contraception, and health. These religious perspectives lead to distinct demographic profiles among various groups. By influencing attitudes toward family size and medical interventions, religion acts as a powerful institutional force that regulates demographic processes and shapes the reproductive landscape of diverse communities.

259. (C) They show how deeply embedded social structures regulate population dynamics.
The study of diverse tribes in India is significant because it provides a microcosm for observing how deeply embedded social structures regulate population dynamics. These groups offer unique institutional frameworks that reveal the influence of traditional practices on demographic outcomes. Analyzing tribal cultures helps demographers understand how kinship systems

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and cultural values manage fertility and mortality within specific, tightly-knit social environments.

260. (A) Shifts in institutions like family and marriage that affect demographic transitions.
Social change in India is highly relevant to population studies because it involves fundamental shifts in traditional institutions like family and marriage. Driven by modernization, education, and economic development, these transformations are crucial for understanding contemporary demographic transitions. As societal norms evolve, they alter reproductive behaviors and migration patterns, directly impacting the nation's overall growth rate and demographic structure.

261. (D) It involves universal coverage and periodic execution.
The modern population census is uniquely characterized by its adherence to universal coverage, individual enumeration, and periodic execution. This systematic approach ensures that every person within a nation's borders is counted at specific intervals. Such comprehensive data collection provides a foundational snapshot of a country's population, capturing demographic, social, and economic characteristics essential for understanding national structure and planning.

262. (B) Governance, policy-making, and national planning.
In India, census data serves as an indispensable resource for national governance, policy-making, and strategic planning. The comprehensive information collected provides the necessary evidence base for demarcating electoral constituencies and allocating resources. By offering a detailed demographic and socio-economic profile of the population, the census enables the government to design targeted welfare programs and monitor developmental progress across various regions.

263. (C) The data becoming outdated due to long intervals between counts.
A significant weakness of the population census is that data can become outdated due to the long intervals between decennial counts. In rapidly changing societies, demographic phenomena evolve quickly, making decade-old information less effective for addressing current issues. Consequently, researchers must rely on other data sources to supplement census figures, ensuring that policy decisions are based on the most recent information.

264. (D) A content error.
A content error in a census refers specifically to the inaccurate reporting of individual characteristics, such as age, literacy, or occupation. Unlike coverage errors that involve missing or double-counting people, content errors compromise the quality of the specific data collected about the enumerated population. These inaccuracies often arise from respondent misreporting or enumerator mistakes, requiring demographers to use statistical adjustment techniques.

265. (A) By serving as a sampling frame for other surveys.
The population census provides critical support for other data collection activities by serving as a comprehensive sampling frame for subsequent surveys. Because the census aims for universal coverage, it offers a complete list of households and individuals from which representative samples can be drawn. This foundational role ensures that specialized surveys are scientifically sound and can produce accurate estimates for the population.

266. (B) The CRS aims for universal coverage, while the SRS operates on a sample basis.
The primary design difference lies in the scope and approach to data collection. The Civil Registration System is designed for universal and continuous recording of all vital events legally. Conversely, the Sample Registration System operates on a sample basis, using a dual-record approach in selected units. This allows the SRS to provide reliable demographic estimates when universal registration remains incomplete or unreliable.

267. (B) To overcome the limitations and under-registration of the CRS.
The Sample Registration System was initiated in India to overcome the significant limitations of the Civil Registration System, particularly under-registration and incomplete coverage. Because the CRS often produces unreliable data due to reporting delays and lack of public awareness, the SRS provides a robust alternative. It generates

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dependable national and state-level estimates of fertility and mortality through a specialized dual-record methodology.

268. (A) Continuous enumeration combined with a retrospective survey.
The dual-record system used in the Sample Registration System involves a combination of continuous enumeration and an independent retrospective survey. A resident enumerator records vital events as they occur, while a supervisor conducts a separate survey every six months. The data from both sources are matched and verified in the field to ensure the highest level of accuracy in demographic reporting.

269. (C) Incomplete coverage and under-registration of vital events.
A persistent problem with the Civil Registration System in India is the incomplete coverage and significant under-registration of vital events. Many births and deaths, especially in rural areas, go unreported despite legal mandates. This issue is often compounded by reporting delays and a lack of awareness among the general public, making the system's data unreliable for calculating precise national vital rates.

270. (D) It provides reliable estimates of fertility and mortality rates.
The key advantage of the Sample Registration System is its ability to provide reliable estimates of fertility and mortality rates at both national and state levels. Its robust dual-record methodology and intensive field verification ensure high data quality. By producing dependable demographic indicators, the SRS serves as a critical tool for monitoring health trends and evaluating the impact of social programs.

271. (C) They allow for the detailed exploration of complex relationships between variables.
Large-scale population surveys are primarily advantageous because they allow for the detailed exploration of complex relationships between demographic, social, economic, and health variables. Unlike the census, which collects broad data, surveys provide depth and flexibility. They enable researchers to analyze how different factors interact, offering insights into the underlying causes of demographic behaviors and supporting more nuanced policy development.

272. (B) The Demographic and Health Surveys (DHS).
The National Family Health Surveys in India are part of the international Demographic and Health Surveys program. This global initiative aims to collect standardized health and demographic data across various countries. Being part of this program ensures that the data collected in India is comparable internationally, providing high-quality information on fertility, family planning, and maternal and child health for researchers.

273. (D) Created standardized, comparable fertility data across many countries.
The World Fertility Survey was a pioneering program because it established standardized and comparable fertility data across many different countries for the first time. By using consistent methodologies and questionnaires, it allowed for cross-national comparisons of reproductive behaviors. This program paved the way for future survey initiatives, such as the Demographic and Health Surveys, which expanded the scope of data collection.

274. (A) They are subject to sampling errors affecting the accuracy of estimates.
A key limitation of population surveys is that they are subject to sampling errors, which can affect the overall accuracy of the estimates. Because surveys only collect data from a representative sample rather than the entire population, there is always a margin of error. The reliability of the findings depends heavily on the quality of the sample design and fieldwork execution.

275. (C) Specialized surveys focusing on specific demographic or health topics.
Surveys like the Reproductive and Child Health Survey, the Comprehensive Nutrition Survey, and the Aging survey are specialized studies focusing on specific demographic or health topics. These surveys provide in-depth information on targeted areas that a general census might not cover. They are invaluable for policy-making as they offer detailed insights into the specific needs and health status of different population groups.

276. (A) A type of error where respondents prefer to report ages ending in specific digits.
Age heaping, also known as digit preference, is a common content error where respondents tend to report ages ending in specific digits, most

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frequently 0 and 5. This phenomenon results in an irregular age distribution with artificial peaks at certain ages. It occurs due to ignorance or cultural preferences, necessitating the use of statistical indices for data appraisal and eventual adjustment.

277. (D) To measure the preference for terminal digits 0 and 5 in age reporting.
Whipple's Index is a specialized demographic tool designed specifically to measure the extent of preference for terminal digits 0 and 5 in age reporting. It provides a numerical value that indicates the quality of age data within a census or survey. By identifying the degree of age heaping on these digits, demographers can assess the overall reliability of the age distribution.

278. (B) Myer's Index examines preference for all terminal digits, whereas Whipple's focuses on 0 and 5.
Myer's Index differs from Whipple's Index by providing a more comprehensive evaluation of age reporting accuracy. While Whipple's Index focuses only on preferences for the digits 0 and 5, Myer's Index examines preferences or avoidances for all ten terminal digits from 0 through 9. This detailed analysis allows for a more thorough assessment of digit preference and the overall quality of age data.

279. (C) Evaluates the overall quality of age and sex data by analyzing their consistency.
The United Nations Age-Sex Accuracy Index is a comprehensive tool used to evaluate the overall quality of age and sex data. It functions by analyzing age ratios, sex ratios, and their consistency across various age groups. By examining these relationships, the index can detect systematic errors and provide an overall score reflecting the accuracy and reliability of the reported population structure.

280. (D) An age distribution should be relatively smooth in the absence of reporting errors.
The application of demographic indices like Whipple's and Myer's rests on the fundamental assumption that a population's age distribution should be relatively smooth in the absence of reporting errors. Under normal circumstances, the number of people at each age should change gradually. Deviations from this expected smoothness, such as sharp peaks or troughs, are interpreted as evidence of data inaccuracies.

281. (A) Fertility, mortality, and migration.
The components of population change are the three fundamental processes: fertility, mortality, and migration. These mechanisms are the primary drivers that cause a population to change in size over time within a specific territory. Fertility adds individuals through births, mortality removes them through deaths, and migration involves the movement of people across boundaries to change their place of residence or stay.

282. (B) The difference between the number of births and the number of deaths.
Natural increase is a basic demographic concept defined as the difference between the number of live births and the number of deaths in a population over a given period. It represents the growth generated solely by vital events, excluding the effects of migration. If births exceed deaths, the population experiences a natural increase, whereas more deaths than births result in a decrease.

283. (B) It is a component that, along with natural increase, determines overall population change.
Migration is a critical component of the demographic balancing equation, acting alongside natural increase to determine the overall population change. It accounts for the movement of individuals into and out of a territory. By combining the net migration with the natural increase, researchers can accurately calculate the total growth or decline of a population over a specific timeframe and region.

284. (A) The actual reproductive performance of a population.
In a demographic context, fertility specifically refers to the actual reproductive performance of a population, typically measured by the number of live births recorded. It is distinct from fecundity, which is the biological capacity to reproduce. As a primary component of population change, fertility acts as the main driver of growth, influenced by social, economic, and individual psychological factors within societies.

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285. (C) Natural increase plus net migration.
The demographic balancing equation is a fundamental formula where the total population change is equal to the sum of natural increase and net migration. Natural increase is the difference between births and deaths, while net migration is the difference between immigration and emigration. This equation provides a comprehensive framework for analyzing the contribution of each component to the overall shift in population.

286. (D) High mortality rates due to famine, disease, and war.
Global population growth remained slow for much of human history primarily due to high mortality rates. Although fertility rates were generally high, the impact of frequent famines, widespread infectious diseases, and recurring wars acted as a force of attrition. These factors kept the number of deaths nearly equal to the number of births, preventing rapid expansion until modern health improvements occurred.

287. (C) Low mortality and low fertility.
The demographic transition describes a historical shift from a stage of high mortality and high fertility to a new equilibrium characterized by low mortality and low fertility. This process typically begins with a decline in death rates due to improved health and nutrition, followed eventually by a decline in birth rates. This transition results in a more stable and slowly growing structure.

288. (B) A sharp decline in mortality combined with sustained high fertility.
India's rapid population increase during the second half of the 20th century was primarily driven by a sharp decline in mortality rates while fertility remained high for a prolonged period. Improvements in public health and medical care significantly reduced death rates. However, because reproductive behaviors changed more slowly, the resulting gap between births and deaths led to an unprecedented surge in size.

289. (D) The overall growth rate is slowing, but there is significant demographic diversity among states.
India's current population scenario is characterized by a slowing overall growth rate alongside significant demographic diversity among its states. While the national fertility rate is declining, there is a stark contrast between southern states, which have reached near-replacement fertility, and northern states, where fertility remains relatively high. This variation creates a complex demographic landscape, showing that population trends are not uniform.

290. (A) There is significant variation in fertility levels between different states.
The demographic profile of India is not monolithic because of the significant variation in fertility levels observed between different states. Southern states often exhibit low, near-replacement fertility, while many northern states continue to have much higher rates. These internal differences mean a single national average does not capture the diverse demographic realities and transitions occurring across the various regions.

291. (C) To connect societal structures with individual demographic behaviors.
Social-psychological concepts serve a primary role in population studies by connecting broad societal structures with individual demographic behaviors. These concepts help explain how person-level factors, such as motivations and beliefs, translate into actions like marriage, childbearing, and migration. By bridging the gap between macro-level trends and micro-level decisions, social psychology provides a deeper understanding of mechanisms driving overall population change.

292. (A) Decisions related to family size and contraceptive use.
Attitudes, values, and beliefs are central social-psychological constructs essential for understanding individual decisions related to family size and contraceptive use. These factors shape how a person perceives the costs and benefits of children and the social acceptability of various reproductive health practices. Understanding these internal psychological elements is crucial for researchers attempting to explain and predict fertility behaviors and outcomes.

293. (D) Fertility behavior.
Perceived social norms—what individuals believe others in their community expect of them—are powerful predictors of fertility behavior. These

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norms influence how people make decisions about childbearing and family size by providing a social framework for what is considered acceptable. Consequently, demographic trends are often a reflection of the collective psychological expectations and social pressures that exist within a specific cultural group.

294. (B) As a complex social process requiring an understanding of audience beliefs.
In the context of population studies, communication is characterized as a complex social process rather than just a simple mechanism for information delivery. It involves understanding the pre-existing beliefs of an audience and crafting culturally sensitive messages. Effective communication requires using trusted channels within a community to influence health-seeking behaviors and promote social norms relevant to managing population and health.

295. (C) Craft culturally sensitive messages and use trusted channels.
Effective public health campaigns related to population issues must prioritize crafting culturally sensitive messages and utilizing communication channels that are trusted by the community. To successfully influence health-seeking behaviors, campaigns must account for the audience's existing attitudes and beliefs. By aligning messages with the cultural context, health programs can more effectively promote new social norms and improve reproductive health services.

296. (D) To estimate the completeness of vital registration data.
The primary purpose of the Chandrasekaran-Deming formula is to estimate the completeness of vital registration data. This technique addresses the common problem of under-registration by using a dual-record approach. By comparing data from two independent sources, it allows demographers to calculate how many births or deaths might have been missed by both systems, providing a more accurate estimate of events.

297. (A) The use of data from two independent collection sources.
The Chandrasekaran-Deming method is founded on the fundamental principle of using data from two independent collection sources for the same population. By cross-classifying the events captured by each source, the formula can estimate the total number of events, including those missed by both. This dual-record approach is essential for identifying under-registration and ensuring that vital statistics are accurate.

298. (B) Vital events missed by both independent sources.
The Chandrasekaran-Deming formula allows demographers to estimate the specific number of vital events that were missed by both independent data sources. By analyzing the overlap and discrepancies between the two records, the formula mathematically projects the quantity of unrecorded births or deaths. This estimation is vital for determining the true volume of vital events and assessing coverage efficiency.

299. (B) The Sample Registration System (SRS).
The design of the Sample Registration System in India is fundamentally based on the principles underlying the Chandrasekaran-Deming formula. The SRS utilizes a dual-record approach, combining continuous enumeration with independent retrospective surveys. This methodology allows for the estimation of missed vital events and provides reliable demographic indicators. By applying these principles, the SRS overcomes the historical limitations of universal systems.

300. (A) To adjust raw data to produce a more plausible and regular age distribution.
The goal of smoothing age data is to adjust raw census or survey data to produce a more plausible and regular age distribution. When data appraisal reveals significant inaccuracies like age heaping, smoothing techniques like moving averages are applied. This process creates a consistent distribution necessary for calculating accurate age-specific rates and constructing life tables, which are essential demographic tools.

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CHAPTER 02

Methods of Demography/Population Analysis

1. Which of the following best defines a 'rate' in demographic analysis?
(A) A demographic relationship between a population subgroup and the total population, expressed as a numerical fraction.
(B) The frequency of a specific demographic event occurring in a defined population during a designated period.
(C) A measure that compares one demographic population subgroup directly to another distinct demographic subgroup.
(D) The total absolute number of demographic events occurring within a specified population over a set timeframe.

2. A demographic measure that expresses the relation of one population subgroup to the total population or to another subgroup is known as a:
(A) Ratio
(B) Rate
(C) Percentage
(D) Density

3. Which of the following statements is incorrect regarding demographic measures?
(A) A proportion is a special type of ratio where the numerator is a part of the denominator.
(B) A percentage is a proportion multiplied by 100.
(C) A ratio cannot have a value greater than one.
(D) A rate always includes a time specification in its denominator.

4. Given below are two statements regarding population growth models:
Statement I: Arithmetic growth model assumes that the population increases by a constant amount per unit of time.
Statement II: Geometric growth model assumes that the population increases at discrete time intervals at a constant rate.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

5. In the context of population analysis, what does 'doubling time' refer to?
(A) The time it takes for the birth rate to become twice the death rate.
(B) The time it takes for the Net Reproduction Rate to reach a value of 2.
(C) The time it takes for a population to increase by 100%.
(D) The average age at which a generation doubles its size.

6. Match List I with List II and select the correct answer using the codes given below.
List I: (Measure)
P. Crude Birth Rate
Q. Population Density
R. Sex Ratio
S. Proportion of Urban Population
List II: (Type)
1. Ratio
2. Proportion
3. Density
4. Rate
Codes:
(A) P-4, Q-3, R-1, S-2
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-1, R-2, S-3
(D) P-2, Q-3, R-4, S-1

7. The concept of 'person-years' is most useful for calculating which of the following?
(A) Population density measures in a specific

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geographical area during a given year.
(B) The sex ratio of a population measured at a specific point in time.
(C) The decadal growth rate of a specific population over a ten-year interval.
(D) Rates when the population at risk changes continuously over a period.

8. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): Standardization of rates is essential for comparing mortality or fertility across different populations.
Reason (R): Populations often differ in their age and sex compositions, which significantly influence crude rates.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

9. What is the primary purpose of the Lexis diagram in demography?
(A) To project future population trends using mathematical formulas.
(B) To calculate the standard deviation of a population distribution.
(C) To display the relationship between events, age, and time.
(D) To show the geographical distribution of a population.

10. Consider the following characteristics regarding the component method of population projection:
a. It projects the population by age and sex.
b. It requires separate assumptions for fertility, mortality, and migration.
c. It is a purely mathematical method that extrapolates past trends.
d. It is less data-intensive than the logistic curve method.
Which of the above statement(s) is/are correct?
(A) a and b only
(B) a and c only
(C) c and d only
(D) b and d only

11. A population with a Net Reproduction Rate (NRR) of unity (1.0) is considered to be:
(A) Experiencing rapid growth.
(B) In a state of decline.
(C) Having a very young age structure.
(D) At exact replacement level.

12. Which of the following mathematical methods of population projection is represented by an S-shaped curve?
(A) Linear model
(B) Logistic model
(C) Exponential model
(D) Polynomial model

13. Consider the following steps of the component method of population projection:
1. Projecting the number of deaths by age and sex.
2. Obtaining a base population by age and sex.
3. Projecting the number of births.
4. Making assumptions about future migration.
5. Surviving the base population forward.
Which of the following represents the correct chronological sequence?
(A) 2, 5, 1, 3, 4
(B) 1, 2, 3, 4, 5
(C) 2, 3, 1, 5, 4
(D) 5, 4, 3, 2, 1

14. 'Incidence' in demography and public health refers to:
(A) The total number of cases of a disease currently existing in a population at a specific point in time.
(B) The proportion of a total population that is currently affected by a particular health condition.
(C) The total count of annual deaths directly caused by a specific disease in a given geographical year.
(D) The rate at which new cases of a disease occur in a population during a specified period.

15. What is the key difference between 'incidence' and 'prevalence'?
(A) Incidence is a rate, while prevalence is a proportion representing cases at a point in time.

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(B) Incidence measures current existing cases, while prevalence measures only newly diagnosed cases.
(C) Incidence relates strictly to mortality, while prevalence relates strictly to morbidity measures.
(D) Incidence is used for chronic diseases, while prevalence is used for acute infectious conditions.

16. Which of the following statements about population pyramids is correct?
(A) A pyramid with a wide base indicates a low birth rate.
(B) A pyramid that is narrow at the base and wider at the top suggests an aging population.
(C) A perfectly rectangular pyramid represents a rapidly growing population.
(D) Constrictions in a pyramid indicate periods of high fertility or immigration.

17. Which of the following is NOT a measure of central tendency?
(A) Mean
(B) Range
(C) Median
(D) Mode

18. In a statistical distribution, which measure of central tendency is most affected by extreme values (outliers)?
(A) Mean
(B) Median
(C) Mode
(D) Geometric Mean

19. Consider the following statistical concepts:
a. Mean and Median are measures of central tendency.
b. Range and Variance are measures of dispersion.
c. Correlation and Regression are methods to analyze relationships between variables.
d. Incidence and Prevalence are measures of population growth.
e. Descriptive and Inductive statistics are two major branches of statistics.
Which of the above statement(s) is/are correct?
(A) a, b, c, d
(B) a, b, d, e
(C) a, b, c, e
(D) b, c, d, e

20. What does a standard error of the mean measure?
(A) The variability of individual data points within a sample.
(B) The difference between the sample mean and the population mean.
(C) The error in data collection during a census.
(D) The variability of sample means around the true population mean.

21. A linear regression analysis results in the equation $Y = 5 + 0.8X$. What does the value 0.8 represent?
(A) The value of Y when X is zero.
(B) The correlation coefficient between X and Y.
(C) The change in Y for a one-unit change in X.
(D) The standard error of the estimate.

22. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): The geometric growth rate is generally considered more realistic for population growth over long periods than the arithmetic growth rate.
Reason (R): The geometric model assumes that the base population for each period's growth includes the growth from the previous period.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

23. Which of the following is the most appropriate method for estimating the population of a small area for a future year, given only the total population counts from the last three censuses?
(A) Component method
(B) Cohort-component method
(C) Creating a population pyramid
(D) Mathematical extrapolation using a linear or exponential curve

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24. Match List I with List II and select the correct answer.
List I: (Projection Type)

P. School Enrolment Projection
Q. Labour Force Projection
R. Household Projection
S. Sub-national Population Projection

List II: (Key Input/Concept)
1. Labour Force Participation Rates
2. Headship Rates
3. Age-specific fertility and mortality differentials
4. School entry and progression rates

Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-1, R-2, S-3
(C) P-2, Q-3, R-4, S-1
(D) P-4, Q-2, R-1, S-3

25. The process of estimating a value that lies between two known values in a series is called:
(A) Extrapolation
(B) Standardization
(C) Interpolation
(D) Regression

26. Which of the following is an example of inductive statistics?
(A) Generalizing from specific sample data to reach conclusions about an entire population.
(B) Calculating the arithmetic mean age of individuals within a specific census sample.
(C) Creating a frequency distribution table of household incomes from survey data.
(D) Visualizing historical population data through the use of a pyramid chart.

27. Given below are two statements regarding population projections made by international bodies:
Statement I: The United Nations provides multiple projection variants (low, medium, high) based on different fertility assumptions.
Statement II: The World Bank's population projections focus primarily on economic development scenarios and workforce estimates.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

28. Which of the following is an incorrect pair of a statistical measure and its description?
(A) Variance - The average of the squared differences from the Mean.
(B) Mode - The arithmetic average of all values in a distribution.
(C) Standard Deviation - The square root of the variance.
(D) Range - The difference between the highest and lowest scores in a distribution.

29. Consider the following statements regarding population estimation:
a. Post-censual estimates refer to the estimation of population for a date that is past, falling between two censuses.
b. Inter-censual estimates refer to the estimation of population for a current or future date, subsequent to the last census.
c. The population pyramid is a graphical method to represent the age-sex structure of a population.
d. Inter-censual estimates are generally considered more accurate than post-censual estimates as they are anchored by two census points.

Which of the above statement(s) is/are correct?
(A) a and b only
(B) c and d only
(C) a, c, and d
(D) b, c, and d

30. The Gompertz curve, used for population projection, is characterized by:
(A) A constant rate of increase leading to a straight-line trend.
(B) A symmetrical S-shape where the point of inflection is at half the carrying capacity.
(C) An asymmetrical S-shape where growth is slower at the beginning and end than in the middle.
(D) An asymmetrical S-shape where growth is slower at the beginning and end than in the middle.

31. In the context of hypothesis testing, what is a test of significance used for?
(A) To determine the probability that an observed effect in a sample is due to random chance.
(B) To prove that the null hypothesis is

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definitively true.
(C) To calculate the correlation coefficient between two variables.
(D) To directly measure the size of the population parameter.

32. The official population projections for India are prepared by which body?
(A) The Census of India
(B) The Expert Committee on Population Projections, Government of India
(C) The National Sample Survey Office (NSSO)
(D) The Ministry of Health and Family Welfare

33. Which measure of dispersion is calculated as the difference between the maximum and minimum values in a dataset?
(A) Variance
(B) Range
(C) Standard Deviation
(D) Interquartile Range

34. A population projection that assumes the annual amount of increase remains the same as that observed during a past inter-censal period is using which method?
(A) Arithmetic Projection
(B) Geometric Projection
(C) Exponential Projection
(D) Logistic Projection

35. The concept of "population stabilization" is demographically achieved when:
(A) The crude birth rate equals the crude death rate.
(B) The total fertility rate falls below 2.1.
(C) The population growth rate becomes zero or near zero.
(D) The country has completed its demographic transition.

36. Consider the following mathematical population growth curves:
1. Logistic
2. Linear (Arithmetic)
3. Exponential
4. Polynomial

Which of the following represents the correct order of these curves based on increasing complexity of their underlying assumptions?
(A) 2, 3, 4, 1
(B) 1, 2, 3, 4
(C) 2, 3, 1, 4
(D) 3, 2, 4, 1

37. A sample parameter is a numerical characteristic of a sample, whereas a population parameter is a numerical characteristic of:
(A) A different sample from the same population.
(B) The sampling distribution.
(C) The entire population.
(D) The standard error.

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38. Which of the following is NOT an assumption of the simple linear regression model?
(A) A linear relationship exists between the independent and dependent variables.
(B) The independent and dependent variables must be categorical.
(C) The residuals (errors) are normally distributed.
(D) The variance of the residuals is constant (homoscedasticity).

39. Consider the following statements. Which one is incorrect?
(A) Descriptive statistics summarize the characteristics of a given data set.
(B) Inductive statistics are used to draw conclusions about a population from a sample.
(C) A frequency distribution is a way of organizing data to show the number of times each value occurs.
(D) The median is always the most frequent value in a dataset.

40. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): In a Lexis diagram, a horizontal line represents the life of an individual aging over time.
Reason (R): The horizontal axis of a Lexis diagram represents time (calendar years), and the vertical axis represents age.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.

(D) A is false but R is true.

41. What is a key limitation of using crude death rates for comparing the mortality levels of two countries?
(A) They do not account for differences in population size.
(B) They are influenced by the age structure of the populations.
(C) They are influenced by the age structure of the populations.
(D) They do not include infant deaths in the calculation.

42. Which of the following projection methods explicitly incorporates the demographic components of change (births, deaths, migration)?
(A) Component method
(B) Gompertz curve method
(C) Polynomial growth curve method
(D) Exponential growth rate method

43. Consider the following statements about measures of central tendency:
a. The mode is the value that appears most frequently in a dataset.
b. In a perfectly symmetrical distribution, the mean, median, and mode are identical.
c. The median is the middle value in an ordered set of data.
d. The mean is calculated by summing all values and dividing by the number of values.
e. The median is highly sensitive to extreme outliers in the data.
Which of the above statement(s) is/are true?
(A) a, b, c, d
(B) a, b, d, e
(C) a, c, d, e
(D) b, c, d, e

44. The decadal growth rate of a population is calculated as:
(A) The average annual growth rate multiplied by ten.
(B) The percentage change in population size between two censuses held ten years apart.
(C) The population at the end of the decade divided by the population at the beginning.
(D) The difference between the number of births and deaths over a decade.

45. If the correlation coefficient (r) between two variables is -0.9, it indicates:
(A) A weak negative linear relationship.
(B) A strong positive linear relationship.
(C) A strong negative linear relationship.
(D) Almost no linear relationship.

46. What does the exponential growth rate model assume?
(A) Population growth occurs at discrete intervals.
(B) The absolute increase in population is constant each year.
(C) Population growth will eventually level off at a carrying capacity.
(D) Population grows continuously at a constant rate.

47. Match List I (Term) with List II (Formula/ Concept).
List I: (Term)
P. Proportion
Q. Rate
R. Ratio
S. Percentage
List II: (Formula/Concept)
1. (Number of events / Population at risk) × k, over a specific time
2. (a / b) × 100
3. a / b
4. a / (a+b)
Codes:
(A) P-4, Q-1, R-3, S-2
(B) P-1, Q-4, R-2, S-3
(C) P-3, Q-2, R-1, S-4
(D) P-4, Q-1, R-2, S-3

48. A researcher is estimating the number of primary school-aged children in a district for the year 2030. This is an example of:
(A) Inter-censual population estimation.
(B) Sub-national school enrolment projection.
(C) Labour force projection.
(D) Household projection.

49. Given below are two statements regarding population pyramids:
Statement I: A bulge in the working-age groups (e.g., 20-40 years) could indicate a "demographic dividend".
Statement II: A narrow top of the pyramid

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signifies low life expectancy and high death rates at older ages.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

50. The method of direct standardization for mortality rates requires which of the following?
(A) The age-specific death rates of the populations being compared.
(B) The age-specific death rates of the standard population.
(C) The age structure of the populations being compared.
(D) The crude death rate of the standard population.

51. All of the following are mathematical methods for population projection EXCEPT:
(A) Gompertz curve
(B) Logistic curve
(C) Component method
(D) Polynomial growth curve

52. What does a sampling distribution represent?
(A) The specific frequency distribution of all raw data points within a single collected sample.
(B) The overall demographic distribution of a target population categorized by age and sex.
(C) The specific geographic distribution of individual sample units selected for a survey.
(D) The probability distribution of a statistic obtained from all possible samples of a specific size.

53. Which of the following is a key feature of the logistic growth curve for population projection?
(A) It assumes unlimited growth potential.
(B) It assumes a constant growth rate.
(C) It incorporates a carrying capacity or upper limit to growth.
(D) It only uses the two most recent census points for calculation.

54. The process of estimating a value that lies beyond the range of known values in a series is known as:
(A) Interpolation
(B) Extrapolation
(C) Standardization
(D) Normalization

55. Which of the following statements about statistical measures is correct?
(A) Variance is always expressed in the same numerical units as the original collected data.
(B) Standard deviation is calculated as the mathematical square of the distribution's variance.
(C) The range is a highly robust measure of dispersion that remains unaffected by outliers.
(D) The standard deviation measures the average spread of data points around the mean.

56. Consider the following factors used to calculate person-years of observation in a demographic study:
a. The size of the population at the beginning of the period.
b. The number of individuals entering the population during the period.
c. The number of individuals leaving the population during the period.
d. The exact dates of entry and exit for each individual.
e. The crude death rate of the population.
Which of the above statement(s) is/are correct?
(A) a and e only
(B) a, b, and c only
(C) b, c, and d only
(D) a, b, c, and d

57. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): Inter-censual estimates of population are typically more reliable than post-censual estimates.
Reason (R): Inter-censual estimates are bounded by two actual census counts, allowing for adjustments based on the closing error.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.

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(C) A is true but R is false.
(D) A is false but R is true.

58. In a Lexis diagram, a diagonal line moving upwards and to the right represents:
(A) A birth cohort aging together through time.
(B) A single individual aging over time.
(C) All events happening at a single point in time across all ages.
(D) The population size at a given age.

59. The 'Net Reproduction Rate' (NRR) is a measure of:
(A) The total number of children a woman will have in her lifetime.
(B) The difference between the crude birth rate and the crude death rate.
(C) The rate of growth of the female population.
(D) The number of daughters a newborn girl is expected to bear, surviving to the age of her mother.

60. Consider the following events related to population estimation for a country with a 2011 and 2021 census:
1. Making a post-censual estimate for the year 2023.
2. Conducting the 2021 census.
3. Making an inter-censual estimate for the year 2015.
4. Using the 2011 census as a base.

Which of the following represents the correct chronological sequence?
(A) 4, 3, 2, 1
(B) 4, 2, 3, 1
(C) 1, 2, 3, 4
(D) 2, 4, 1, 3

61. For a population projection of households, what is the 'headship rate' method based on?
(A) The average size of households.
(B) The rate of new household formation through marriage.
(C) The proportion of individuals in each age-sex group who are heads of households.
(D) The total number of available housing units within a specific area.

62. If a population grows from 1,000,000 to 1,200,000 in 10 years, what is its decadal growth rate?
(A) 1.2%
(B) 2%
(C) 200,000
(D) 20%

63. Which of the following is a measure of dispersion?
(A) Standard Deviation
(B) Median
(C) Mean
(D) Mode

64. Match List I (Statistical Concept) with List II (Application).
List I: (Statistical Concept)
P. Descriptive Statistics
Q. Inductive Statistics
R. Correlation
S. Linear Regression
List II: (Application)
1. Predicting the value of one variable based on another.
2. Summarizing the mean age and income of a sample.
3. Measuring the strength and direction of a linear association between two variables.
4. Generalizing findings from a survey to the entire country.

Codes:
(A) P-2, Q-4, R-3, S-1
(B) P-1, Q-2, R-3, S-4
(C) P-2, Q-4, R-1, S-3
(D) P-4, Q-2, R-3, S-1

65. Given below are two statements:
Statement I: The geometric growth model formula is $P_t = P_0(1+r)^t$.
Statement II: The exponential growth model formula is $P_t = P_0 e^{rt}$.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

66. A major difference between a ratio and a proportion is that:
(A) A proportion's numerator is a subset of its denominator, which is not necessarily true for a ratio.
(B) A proportion is always expressed as a percentage, while a ratio is not.

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(C) A ratio measures change over time, while a proportion is static.
(D) A proportion can be larger than 1, but a ratio cannot.

67. The "Expert Committee of Government of India" for population projections primarily uses which method for its official national and sub-national projections?
(A) Logistic curve method
(B) Exponential growth model
(C) Cohort-component method
(D) Linear extrapolation

68. Consider the following statements about population projection methods:
a. Mathematical methods are generally simpler and require less data than component methods.
b. The component method provides insights into the changing age structure, which mathematical methods do not.
c. Logistic curves are suitable for short-term projections but not long-term ones.
d. Sub-national projections are more complex than national projections due to the added component of internal migration.
Which of the above statement(s) is/are correct?
(A) a, b, and c
(B) a, c, and d
(C) b, c, and d
(D) a, b, and d

69. In a frequency distribution, the 'mode' is defined as:
(A) The middle value of the dataset.
(B) The sum of values divided by the count of values.
(C) The value that occurs with the highest frequency.
(D) The difference between the highest and lowest values.

70. Which of the following is NOT a typical component considered in the component method of population projection?
(A) Fertility rates
(B) Population density
(C) Mortality rates
(D) Migration rates

71. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): The shape of a population pyramid provides a visual representation of a population's demographic history.
Reason (R): Major events like wars, famines, or baby booms leave a lasting impact on the size of specific age cohorts, which is visible in the pyramid's structure.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

72. If a study follows 100 people for 5 years, and 50 people for 10 years, what are the total person-years of observation?
(A) 1000
(B) 150
(C) 750
(D) 15

73. The decadal growth rate is a specific application of which general growth rate model?
(A) Arithmetic growth rate
(B) Exponential growth rate
(C) Geometric growth rate
(D) Logistic growth rate

74. Which of the following statements about the UN's World Population Prospects is incorrect?
(A) It publishes only one projection variant based on the most likely scenario.
(B) It provides population estimates and projections for all countries.
(C) It includes projections of fertility, mortality, and international migration.
(D) It is a key data source for international agencies and researchers.

75. The calculation of workforce projections from a general population projection requires which additional data?
(A) Age-sex specific headship rates.
(B) Age-sex specific school enrolment rates.
(C) Age-sex specific mortality rates.
(D) Age-sex specific labour force participation rates.

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76. In statistics, what is the primary purpose of 'extrapolation'?
(A) To summarize a dataset using a single value.
(B) To predict values beyond the range of the observed data.
(C) To estimate values between known data points.
(D) To correct errors in data collection.

77. Consider the following statements regarding population analysis:
a. Doubling time is inversely related to the rate of population growth.
b. A population pyramid provides a graphical representation of the age-sex composition.
c. Net Reproduction Rate of less than 1 indicates a population is below replacement level.
d. The component method of projection requires data on births, deaths, and migration.
e. Exponential growth assumes a continuously decelerating rate of increase.
Which of the above statement(s) is/are correct?
(A) a, b, c, d
(B) a, b, d, e
(C) a, c, d, e
(D) b, c, d, e

78. Which of the following is the most appropriate example of a 'ratio' in demography?
(A) The number of births per 1,000 population.
(B) The percentage of the population living in urban areas.
(C) The number of deaths in the first year of life per 1,000 live births.
(D) The number of males per 100 females.

79. Given below are two statements:
Statement I: The polynomial growth curve method can fit complex population trends by using higher-degree equations.
Statement II: A major disadvantage of the polynomial method is that it can lead to unrealistic projections in the long term.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

80. A 'post-censual' population estimate refers to an estimate for a date:
(A) Between two past censuses.
(B) After the most recent census.
(C) Exactly on a census date.
(D) Before any census was conducted.

81. Match List I (Growth Model) with List II (Characteristic).
List I: (Growth Model)
P. Arithmetic
Q. Geometric
R. Exponential
S. Logistic
List II: (Characteristic)
1. Assumes continuous compounding of growth.
2. Incorporates an upper limit or carrying capacity.
3. Assumes a constant absolute amount of change per period.
4. Assumes a constant rate of change compounded at discrete intervals.
Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-4, R-1, S-2
(C) P-3, Q-1, R-4, S-2
(D) P-2, Q-4, R-1, S-3

82. What is the fundamental difference between descriptive and inductive statistics?
(A) Descriptive statistics summarizes data, while inductive statistics makes inferences from data.
(B) Descriptive statistics uses charts, while inductive statistics uses formulas.
(C) Descriptive statistics is used for large populations, while inductive is for small samples.
(D) Descriptive statistics deals with prediction, while inductive statistics deals with past data.

83. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): The standard error of the mean decreases as the sample size increases.
Reason (R): A larger sample is more likely to be representative of the population, thus reducing the variability of sample means.

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(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

84. In a hypothetical study on a new vaccine, the 'incidence' of the disease among the vaccinated group would be:
(A) The total number of vaccinated people who have the disease at the start of the study.
(B) The total number of people who received the vaccine.
(C) The severity of the disease in those who get infected after vaccination.
(D) The proportion of vaccinated people who develop the disease during the study period.

85. Which growth rate formula is expressed as $P_t = P_0 + bt$?
(A) Geometric
(B) Exponential
(C) Arithmetic/Linear
(D) Logistic

86. The concept of "location of an event in time" is visually represented by which demographic tool?
(A) Population Pyramid
(B) Lexis Diagram
(C) Lorenz Curve
(D) Growth Curve

87. Which of the following would NOT be a direct input for a school enrolment projection using the grade-progression method?
(A) Number of new entrants to the first grade.
(B) Grade-specific promotion, repetition, and dropout rates.
(C) Population of school-entry age.
(D) Number of teachers per school.

88. If a distribution of household incomes in a city is positively skewed, which of the following is most likely to be true?
(A) Mean > Median > Mode
(B) Mean = Median = Mode
(C) Mean < Median < Mode
(D) Mode > Mean > Median

89. Consider the following reasons for using standardized rates instead of crude rates:
a. To compare mortality between a very young population and a very old population.
b. To track mortality changes over a long period in a single population whose age structure is changing.
c. To eliminate the effect of differing age compositions.
d. To simplify the calculation process and reduce data requirements.
Which of the above statement(s) is/are correct?
(A) a and d only
(B) b and c only
(C) a, b, and c
(D) a, b, c, and d

90. The term 'population stabilization' is synonymous with a state where the population experiences:
(A) Zero population growth.
(B) High birth rate and high death rate.
(C) A Net Reproduction Rate of 2.1.
(D) The completion of the first stage of demographic transition.

91. Which of the following is a key principle behind the World Bank's population projections?
(A) They are primarily driven by assumptions about global political stability.
(B) They focus on a single, deterministic future trajectory.
(C) They ignore the component of international migration.
(D) They are often linked to economic forecasting and development indicators.

92. Consider the following statistical measures:
1. Variance
2. Mean
3. Standard Deviation
4. Sum of squared differences from the mean
Which of the following represents the correct logical order of their calculation?
(A) 1, 2, 3, 4
(B) 2, 4, 1, 3
(C) 2, 1, 4, 3
(D) 4, 2, 1, 3

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93. A population grows from P1 to P2 over 'n' years. The formula for the annual geometric growth rate (r) is:
(A) $r = ((P_2 - P_1)/n)/P_1$
(B) $r = (P_2 - P_1)/n$
(C) $r = [(P_2/P_1)^{(1/n)}] - 1$
(D) $r = \ln(P_2/P_1)/n$

94. The 'prevalence' of a chronic disease in a community is:
(A) The number of new cases diagnosed in the past year.
(B) The rate at which people are dying from the disease.
(C) The average duration of the disease before recovery or death.
(D) The proportion of the population having the disease at a specific point in time.

95. Given below are two statements:
Statement I: Correlation implies causation.
Statement II: Linear regression analysis can be used to establish a causal relationship between two variables.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

96. Which method is most appropriate for projecting the population of a country with detailed data on age-specific fertility, mortality, and migration?
(A) Arithmetic method
(B) Component method
(C) Logistic curve method
(D) Exponential method

97. An 'inter-censual' estimate of population refers to an estimate for a date:
(A) After the last census was taken.
(B) Between two past census dates.
(C) Before the first census was taken.
(D) On the exact date of a future census.

98. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): The Gompertz curve is an S-shaped curve used for population projections.
Reason (R): Unlike the symmetric logistic curve, the Gompertz curve is asymmetric, which some argue better represents population growth that starts slow, accelerates, and then decelerates more gradually.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

99. In a Lexis diagram, what does a vertical line represent?
(A) The life path of a single individual.
(B) The aging of a birth cohort.
(C) The population of all ages at a single point in time.
(D) The number of deaths occurring in a specific year.

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100. Match List I (Term) with List II (Example).
List I: (Term)
P. Incidence Rate
Q. Prevalence
R. Population Density
S. Sex Ratio
List II: (Example)
1. Number of people per square kilometer.
2. Number of new flu cases per 1,000 population in 2022.
3. Number of males per 100 females in a population.
4. Percentage of people with diabetes on January 1, 2023.
Codes:
(A) P-4, Q-2, R-1, S-3
(B) P-2, Q-4, R-3, S-1
(C) P-2, Q-4, R-1, S-3
(D) P-1, Q-3, R-2, S-4

101. The 'Rule of 70' is a quick way to estimate a population's doubling time. It is calculated by:
(A) Multiplying the annual growth rate (in percent) by 70.
(B) Dividing the annual growth rate by 70.
(C) Dividing 70 by the annual growth rate (in percent).
(D) Adding 70 to the annual growth rate.

102. Which of the following is a primary characteristic of a population projection using a polynomial curve?
(A) It always results in an S-shaped curve.
(B) It fits a curve to a series of past population observations.
(C) It explicitly models fertility, mortality, and migration.
(D) It guarantees that the projected population will not become negative.

103. Consider the following inputs for a sub-national population projection using the component method:
a. Base year population by age and sex for each sub-national region.
b. Assumptions about future fertility and mortality for each region.
c. Assumptions about future inter-regional migration flows.
d. National level population density.
e. Historical climate data for each region.
Which of the above statement(s) is/are correct?
(A) a, b, c, d, e
(B) a, b, c
(C) a, b, d
(D) c, d, e

104. The difference between the crude birth rate and the crude death rate is known as the:
(A) Rate of natural increase.
(B) Total fertility rate.
(C) Net reproduction rate.
(D) Gross reproduction rate.

105. For which of the following distributions would the median be a more appropriate measure of central tendency than the mean?
(A) A normal distribution of student test scores.
(B) A distribution of heights in an adult population.
(C) A highly skewed distribution of annual incomes.
(D) A symmetrical, bell-shaped distribution.

106. A key difference between geometric and exponential growth models is:
(A) Geometric assumes growth at discrete intervals, while exponential assumes continuous growth.
(B) Geometric results in a J-shaped curve, while exponential results in an S-shaped curve.
(C) Geometric can be used for declining populations, while exponential cannot.
(D) Geometric is a mathematical method, while exponential is a component method.

107. Which of the following is NOT a measure of dispersion?
(A) Range
(B) Variance
(C) Standard deviation
(D) Median

108. Given below are two statements:
Statement I: A post-censual estimate for 2015 becomes an inter-censual estimate once the 2021 census data is available.
Statement II: Inter-censual estimates can be adjusted for error of closure, which is the difference between the projected population for the census year and the actual census count.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

109. If a researcher wants to understand the relationship between years of education (X) and annual income (Y), which two statistical methods would be most appropriate to start with?
(A) Measures of central tendency and dispersion only.
(B) Incidence and prevalence rates.
(C) Correlation and linear regression.
(D) Interpolation and extrapolation.

110. All of the following are demographic rates EXCEPT:
(A) Crude Birth Rate
(B) Infant Mortality Rate
(C) Age-Specific Fertility Rate
(D) Sex Ratio

111. Which of the following is a key step in the direct standardization of mortality rates?
(A) Applying the study population's age-specific death rates to the age structure of a selected standard population.
(B) Applying the study population's specific

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age structure to the death rates of a selected standard population.
(C) Calculating the weighted average of the study population's age distribution based on local parameters.
(D) Using the total deaths and total population of both study and standard populations for direct summation.

112. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): The component method is generally considered the most sophisticated and demographically sound method for population projection.
Reason (R): It only requires the total population figures from the last two censuses to project future trends.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

113. A population pyramid with a narrow base and a wide top, resembling a coffin shape, is characteristic of:
(A) A rapidly growing population with high fertility.
(B) A declining population with very low fertility and low mortality.
(C) A stable population with replacement-level fertility.
(D) A population that has experienced a recent baby boom.

114. Consider the following steps in hypothesis testing:
1. Formulate the null and alternative hypotheses.
2. Collect sample data.
3. Choose a significance level (alpha).
4. Make a decision to reject or fail to reject the null hypothesis.
5. Compute the test statistic.

Which of the following represents the correct chronological sequence?
(A) 1, 3, 2, 5, 4
(B) 2, 1, 3, 5, 4
(C) 1, 2, 3, 4, 5
(D) 3, 1, 2, 5, 4

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115. What type of statistic is the Standard Deviation?
(A) A measure of central tendency.
(B) A measure of association.
(C) A measure of dispersion.
(D) A measure of relative position.

116. Match List I with List II.
List I: (Projection Scenario)
P. Labour Force Projection
Q. Household Projection
R. National Population Projection
S. School Enrolment Projection
List II: (Primary Method/Rate)
1. Cohort-Component Method
2. Age-Sex Specific Headship Rates
3. Age-Sex Specific Labour Force Participation Rates
4. Grade Progression Ratios

Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-2, R-1, S-4
(C) P-2, Q-3, R-4, S-1
(D) P-4, Q-1, R-2, S-3

117. The concept of population density measures:
(A) The rate of population growth in a specific area.
(B) The concentration of population in urban centers.
(C) The number of people relative to a given land area.
(D) The age and sex distribution of a population.

118. Consider the following statements about different types of population growth rates:
a. The arithmetic rate assumes a constant absolute increase per year.
b. The geometric rate assumes growth is compounded annually at a constant rate.
c. The exponential rate assumes growth is compounded continuously at a constant rate.
d. For a growing population, the exponential rate will be slightly higher than the geometric rate, which will be higher than the arithmetic rate.

Which of the above statement(s) is/are correct?
(A) a and b only

(B) c and d only
(C) a, b, and c only
(D) a, b, c, and d

119. A key assumption of linear interpolation and extrapolation is that:
(A) The population is growing according to a logistic curve.
(B) Fertility and mortality rates are stable.
(C) The population has a stable age distribution.
(D) The rate of change is constant between or beyond the known points.

120. In demography, a 'proportion' is a specific type of ratio where:
(A) The numerator is included in the denominator.
(B) The numerator and denominator are from different populations.
(C) The value is always greater than 1.
(D) Time is always a factor in the denominator.

121. The primary objective of standardizing a rate is to:
(A) Make the calculation simpler.
(B) Adjust for errors in data collection.
(C) Enable comparison by removing the confounding effect of a third variable (e.g., age).
(D) Project the rate into the future.

122. Given below are two statements:
Statement I: The mean, median, and mode are all measures of central tendency.
Statement II: The range, variance, and standard deviation are all measures of dispersion.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

123. The Gompertz and Logistic growth curves are both examples of what kind of mathematical function?
(A) Linear
(B) Quadratic
(C) Exponential
(D) Sigmoid (S-shaped)

124. What does a correlation coefficient of 0 indicate?
(A) A perfect linear relationship.
(B) No linear relationship between the variables.
(C) A causal relationship between the variables.
(D) The variables are inversely related.

125. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): Sub-national population projections are often more challenging to produce than national-level projections.
Reason (R): Sub-national projections require data and assumptions on internal migration, which is often difficult to measure and highly volatile.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

126. If a population grows from 25 per 1,000 births and 8 per 1,000 deaths, and there is no migration, what is the annual rate of natural increase?
(A) 33 per 1,000
(B) 3.125 per 1,000
(C) 200 per 1,000
(D) 17 per 1,000

127. Consider the following statements about demographic measures:
a. A rate measures the occurrence of an event in a population over a given time period.
b. A ratio compares the size of two different groups.
c. A proportion compares a subgroup to the total group.
d. A percentage is a proportion multiplied by 1000.
e. Population density is a measure of dispersion.
Which of the above statement(s) is/are correct?
(A) a, b, c, d
(B) b, c, d, e
(C) a, b, c
(D) a, c, e

128. The 'error of closure' in the context of population estimates is the difference between:
(A) A post-censual estimate and an inter-

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censual estimate.
(B) The population projected to a census date and the actual census count.
(C) The sample mean and the population mean.
(D) The number of births and the number of deaths.

129. The main advantage of using the median over the mean is that the median is:
(A) Easier to calculate for all data types.
(B) Less affected by extreme values or outliers.
(C) Always a whole number.
(D) The most frequently occurring value.

130. To project the future number of elderly people needing care, a demographer would most likely need to perform a:
(A) Age-specific population projection using the component method.
(B) School enrolment projection.
(C) Labour force projection.
(D) Household projection.

131. The exponential growth rate (r) is calculated using the formula $r = (\ln(P_t/P_0))/t$. What does 'ln' represent?
(A) The linear operator.
(B) The logistic function.
(C) The natural logarithm.
(D) The base-10 logarithm.

132. Consider the following population projection methods:
1. Component Method
2. Linear (Arithmetic) Extrapolation
3. Logistic Curve Method
4. Sub-national Component Method

Which of the following represents the correct sequence from least to most data-intensive?
(A) 2, 3, 1, 4
(B) 1, 2, 3, 4
(C) 4, 1, 3, 2
(D) 2, 1, 4, 3

133. Which organization is globally recognized for producing the "World Population Prospects," which includes comprehensive population projections for all countries?
(A) The World Bank
(B) The International Monetary Fund (IMF)
(C) The Population Division of the United Nations
(D) The World Health Organization (WHO)

134. Given below are two statements:
Statement I: The standard error is a measure of the dispersion of individual data points.
Statement II: The standard deviation is a measure of the variability of a sample statistic, such as the mean.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

135. Which of the following is the best description of a 'frequency distribution'?
(A) A simple historical graph showing the total population growth trends observed over a decade.
(B) The numerical arithmetic average value of a specific set of numbers within a survey.
(C) A specific mathematical method used for projecting the future size of a sub-national population.
(D) A table or graph that displays how often different values or categories occur in a dataset.

136. If a population doubles in 35 years, its approximate annual growth rate, according to the 'Rule of 70', is:
(A) 2%
(B) 0.5%
(C) 1%
(D) 3.5%

137. Which of the following is an incorrect statement about the component method of population projection?
(A) It requires age-sex specific data for the base population.
(B) It involves making separate assumptions about fertility, mortality, and migration.
(C) It is a type of mathematical curve-fitting method.
(D) It produces projected populations by age and sex for future years.

138. Match List I (Axis/Line in Lexis Diagram) with List II (Representation).

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List I:
P. Horizontal Axis
Q. Vertical Axis
R. Diagonal Line (slope +1)
S. Vertical Line
List II:
1. Age
2. Population at a point in time
3. Time (Calendar Year)
4. A cohort aging through time
Codes:
(A) P-1, Q-3, R-2, S-4
(B) P-3, Q-1, R-4, S-2
(C) P-3, Q-1, R-2, S-4
(D) P-1, Q-3, R-4, S-2

139. If Net Reproduction Rate (NRR) is 0.8, it implies that, on average:
(A) Each individual woman is successfully replacing herself and her spouse within the next generation.
(B) The total target population is currently growing at a standardized generation rate of eighty percent.
(C) The specific population has achieved demographic stability with zero long-term fluctuation in size.
(D) The generation of daughters will be 20% smaller than the generation of mothers.

140. Which of the following is NOT a mathematical growth curve used for population projection?
(A) Gompertz
(B) Lexis
(C) Logistic
(D) Polynomial

141. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): In a population with a very young age structure, the crude death rate might be lower than in a population with an older age structure, even if the underlying age-specific mortality is higher.
Reason (R): The crude death rate is a weighted average of age-specific death rates, where the weights are the proportions of people in each age group. A younger population has more people in low-mortality age groups.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

142. What is a "population parameter"?
(A) A value calculated from a sample of the population.
(B) The size of the sample used in a survey.
(C) An error made during data collection.
(D) A numerical summary of the entire population.

143. Which of the following statements about linear regression is incorrect?
(A) It proves a causal link when the correlation coefficient is near 1 or -1.
(B) It models the linear relationship between a dependent variable and one or more independent variables.
(C) The output can be used to predict the value of the dependent variable.
(D) It aims to find the "line of best fit" that minimizes the sum of squared errors.

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144. Consider the following statements regarding population projection:
a. The United Nations provides high, medium, and low variants for its projections.
b. The World Bank's projections are often tailored for economic analysis.
c. India's official projections are made by an Expert Committee using the component method.
d. Mathematical methods like the logistic curve require detailed fertility and mortality data.
e. Sub-national projections are simpler than national ones as the populations are smaller.
Which of the above statement(s) is/are correct?
(A) a, b, c
(B) a, d, e
(C) b, c, d
(D) c, d, e

145. "The number of live births in a year per 1,000 women aged 15-49" is the definition of:
(A) Crude Birth Rate
(B) General Fertility Rate
(C) Total Fertility Rate

(D) Gross Reproduction Rate

146. A population pyramid that is nearly rectangular in shape represents:
(A) A stationary or slow-growing population with low fertility and low mortality.
(B) A young and rapidly growing population.
(C) A population that has experienced a major war or famine.
(D) A population with high birth rates and high death rates.

147. What is the main purpose of hypothesis testing in statistics?
(A) To prove a theory is 100% correct.
(B) To summarize a large dataset into a single number.
(C) To make a decision about a population parameter based on sample evidence.
(D) To calculate the mean and standard deviation of a sample.

148. Given below are two statements:
Statement I: Interpolation is the process of estimating values that fall between two known data points.
Statement II: Extrapolation is the process of estimating values that fall outside the range of known data points.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

149. The 'carrying capacity' is a central concept in which population projection model?
(A) Arithmetic model
(B) Exponential model
(C) Logistic model
(D) Polynomial model

150. Which measure of central tendency is defined as the value that divides an ordered dataset into two equal halves?
(A) Mean
(B) Median
(C) Mode
(D) Range

151. Which of the following is an example of a population 'ratio'?
(A) 40% of the population is under age 15.
(B) The birth rate is 20 per 1000 population.
(C) 74% of the population is literate.
(D) There are 940 females for every 1000 males.

152. Which statement best describes the 'component method' of population projection?
(A) It projects the population by calculating future births, subtracting future deaths, and adding net migration.
(B) It fits a mathematical S-curve to past population totals.
(C) It extrapolates the past rate of growth into the future.
(D) It projects the population based on its correlation with economic growth.

153. Consider the following terms:
1. Rate
2. Crude Death Rate
3. Age-Specific Death Rate
4. Infant Mortality Rate

Which of the following represents the correct sequence from most general to most specific?
(A) 1, 2, 3, 4
(B) 1, 3, 2, 4
(C) 2, 1, 4, 3
(D) 4, 3, 2, 1

154. 'Inductive statistics' involves:
(A) Using sample data to make inferences or predictions about a larger population.
(B) Describing the main features of a collected dataset.
(C) Creating charts and graphs to visualize data.
(D) Calculating the mean, median, and mode of a sample.

155. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): The logistic curve model is often considered more realistic for long-term population projections than the exponential model.
Reason (R): The logistic model incorporates the concept of a carrying capacity, implying that growth slows as the population approaches an upper limit.

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(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

156. The square of the standard deviation is known as the:
(A) Range
(B) Variance
(C) Mean deviation
(D) Coefficient of variation

157. Which of the following projection methods would most heavily rely on 'age-specific headship rates'?
(A) School enrolment projection
(B) Labour force projection
(C) Household projection
(D) National population projection

158. Match List I (Term) with List II (Description).
List I: (Term)
P. Population Parameter
Q. Sample Statistic
R. Sampling Distribution
S. Standard Error
List II: (Description)
1. A value calculated from a sample.
2. The standard deviation of a sampling distribution.
3. A true value describing a characteristic of the entire population.
4. The probability distribution of a statistic from all possible samples.
Codes:
(A) P-3, Q-1, R-4, S-2
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-1, R-2, S-4
(D) P-1, Q-3, R-4, S-2

159. Which of the following is NOT a measure of central tendency?
(A) Variance
(B) Arithmetic Mean
(C) Median
(D) Mode

160. Consider the following statements about population pyramids:
a. A wide base indicates a high birth rate.
b. A rapid tapering towards the top indicates high death rates and low life expectancy.
c. A bulge in the middle indicates a "demographic dividend" potential.
d. A perfectly rectangular shape indicates a very rapidly growing population.
e. Indentations or 'bites' can reflect historical events like wars or famines.
Which of the above statement(s) is/are incorrect?
(A) d only
(B) a and c only
(C) d and e only
(D) a, b, and e

161. A demographic 'rate' differs from a 'proportion' in that a rate must:
(A) Be expressed as a percentage.
(B) Refer to a specific period of time.
(C) Have a numerator that is part of the denominator.
(D) Be a value between 0 and 1.

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162. In a regression analysis, the 'dependent' variable is the one that is:
(A) Being predicted or explained.
(B) Manipulated or controlled by the researcher.
(C) Used to make predictions.
(D) Held constant throughout the analysis.

163. Given below are two statements:
Statement I: The UN's medium-variant projection assumes that fertility in all countries will converge towards replacement level.
Statement II: The World Bank's population projections are independent of its economic forecasts.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

164. The arithmetic growth model is appropriate for short-term projections because it assumes:
(A) The growth rate is proportional to the population size.
(B) The population is approaching a carrying capacity.
(C) The growth is compounded continuously.
(D) The population adds a constant number of

people each year.

165. The term 'person-years' is a method for:
(A) Projecting the population of elderly persons.
(B) Estimating the average age of the population.
(C) Measuring the population exposure to risk over a period of time.
(D) Calculating the life expectancy at birth.

166. A researcher calculates the average income for a sample of 1000 households. This average income is an example of a:
(A) Population parameter
(B) Sample statistic
(C) Sampling distribution
(D) Standard error

167. Which of the following statements correctly differentiates between incidence and prevalence?
(A) Incidence is a count, while prevalence is a rate.
(B) Incidence refers to chronic diseases, while prevalence refers to acute diseases.
(C) Incidence includes both new and old cases, while prevalence includes only new cases.
(D) Incidence measures risk, while prevalence measures burden of disease.

168. Which of the following is the most significant challenge in creating accurate sub-national population projections compared to national ones?
(A) The volatility and difficulty in measuring internal migration.
(B) Higher mortality rates in sub-national regions.
(C) The lack of national census data.
(D) The complexity of calculating birth rates.

169. What is the 'mode' of the following data set: {2, 3, 4, 4, 5, 5, 5, 6, 7}?
(A) 4
(B) 4.5
(C) 5
(D) 9

170. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): The standard deviation can never be a negative value.
Reason (R): It is calculated as the square root of the variance, and the variance itself is an average of squared (and therefore non-negative) values.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

171. Which of the following mathematical models of population projection does NOT produce an S-shaped curve?
(A) Logistic model
(B) Gompertz model
(C) Both A and B
(D) Exponential model

172. Consider the following statements about population estimation methods:
a. Inter-censual estimation is for a date between two censuses.
b. Post-censual estimation is for a date after the latest census.
c. Inter-censual estimates are generally more accurate than post-censual ones.
d. The Balancing Equation is often used in these estimations.
e. These methods are alternatives to conducting a full census.
Which of the above statement(s) is/are correct?
(A) a, b, c, d, e
(B) a, b, c, d
(C) a, c, d, e
(D) b, c, e

173. The primary purpose of a Lexis diagram is to:
(A) Project population growth using a mathematical formula.
(B) Compare the age structures of two different populations.
(C) Show the relationship between age, period, and cohort.
(D) Display the correlation between fertility and mortality.

174. A Net Reproduction Rate (NRR) of 1.0 signifies:
(A) The population will double in one generation.
(B) Each woman is having one child on average.

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(C) The birth rate is equal to the death rate.
(D) The female population is exactly replacing itself.

175. Which type of statistic (descriptive or inductive) is being used when a news report says, "Based on a survey of 2,000 voters, we project that the incumbent will win the election"?
(A) Inductive
(B) Descriptive
(C) Both
(D) Neither

176. Which of the following represents the formula for the exponential growth rate?
(A) $P_t = P_0(1+r)^t$
(B) $P_t = P_0 e^{rt}$
(C) $P_t = P_0 + rt$
(D) $P_t = K/(1+e^{a-bt})$

177. The 'standard population' in the method of standardization is used to:
(A) Act as the base population for a component projection.
(B) Provide a common set of weights (age structure) for comparing rates.
(C) Determine the correlation between two variables.
(D) Calculate the standard deviation of the population.

178. Given below are two statements:
Statement I: The range is a highly stable measure of dispersion.
Statement II: The standard deviation is sensitive to every value in the distribution.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

179. A linear regression model is fitted as: Income = 20,000 + 3,000 × (Years of Education). What is the interpretation of the 20,000?
(A) The average income for the sample.
(B) The increase in income for each additional year of education.
(C) The predicted income for a person with zero years of education.
(D) The maximum possible income.

180. Which of the following is NOT an advantage of the component method of population projection?
(A) It provides projected population by age and sex.
(B) It makes the underlying demographic assumptions explicit.
(C) It is demographically more meaningful than purely mathematical methods.
(D) It is simple to apply and has minimal data requirements.

181. Which body is responsible for preparing official population projections for India, which are widely used for planning purposes?
(A) NITI Aayog
(B) Registrar General and Census Commissioner of India
(C) Technical Group/Expert Committee on Population Projections constituted by the Government of India.
(D) National Statistical Office (NSO)

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182. Which of the following is a key difference between the Gompertz and Logistic growth curves?
(A) Only the Logistic curve is S-shaped.
(B) The Logistic curve is symmetric, while the Gompertz curve is asymmetric.
(C) Only the Gompertz curve has a carrying capacity.
(D) The Gompertz curve is used for population, while the Logistic is for economics.

183. Consider the following steps of analysis:
1. Calculate correlation coefficient.
2. Formulate a hypothesis about a relationship between two variables.
3. Fit a linear regression model.
4. Plot a scatter diagram.

Which of the following represents the correct logical sequence?
(A) 2, 4, 1, 3
(B) 1, 2, 3, 4
(C) 4, 3, 2, 1
(D) 2, 1, 4, 3

184. The standard error of a sample mean is a measure of:
(A) The likely sampling error in the sample mean as an estimate of the population

mean.
(B) The mathematical error observed in the direct measurement of individual data points.
(C) The spread or general variance of individual data points around the specific sample mean.
(D) The specific statistical bias introduced by using a non-randomized sampling method.

185. A population pyramid with a very wide base that narrows rapidly is typical of a country with:
(A) Low birth rate and low death rate.
(B) Low birth rate and high death rate.
(C) High birth rate and high death rate.
(D) High birth rate and low death rate.

186. Match List I with List II.
List I: (Statistical Term)
P. Mean
Q. Standard Deviation
R. Correlation Coefficient
S. Regression Slope
List II: (Interpretation)
1. Strength and direction of a linear relationship.
2. Measure of spread or dispersion around the mean.
3. Measure of central tendency or average.
4. Change in the dependent variable for a one-unit change in the independent variable.
Codes:
(A) P-3, Q-2, R-1, S-4
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-4, R-1, S-2
(D) P-1, Q-4, R-3, S-2

187. "The process of using sample results to help make decisions or predictions about a population" is the definition of:
(A) Descriptive statistics
(B) Population projection
(C) Data visualization
(D) Inferential (or Inductive) statistics

188. Consider the following characteristics regarding the logistic growth curve method for population projection:
a. It is a mathematical method.
b. It produces an S-shaped growth path.
c. It requires an externally specified upper limit (carrying capacity).
d. It explicitly models fertility and mortality rates.
e. It is suitable for modeling growth in a constrained environment.
Which of the above statement(s) is/are correct?
(A) a, b, d
(B) a, b, c, e
(C) c, d, e
(D) a, d, e

189. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): The median is often a better measure of central tendency for skewed data like income than the mean.
Reason (R): The median is less sensitive to a few extremely high or low values (outliers) which can pull the mean in their direction.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

190. To project the future size of the labour force, one must first project the total population by age and sex and then apply:
(A) Age-sex specific school enrolment rates.
(B) Age-sex specific marital rates.
(C) Age-sex specific dependency ratios.
(D) Age-sex specific labour force participation rates.

191. A population growing at a 2% annual rate will double in approximately:
(A) 35 years
(B) 20 years
(C) 50 years
(D) 70 years

192. What is the fundamental unit being tracked on a Lexis Diagram?
(A) A geographical area.
(B) The life-line of an individual or a cohort.
(C) A population total.
(D) A statistical average.

193. Given below are two statements:

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Statement I: The geometric growth rate assumes compounding at discrete intervals (e.g., annually).
Statement II: The exponential growth rate assumes continuous compounding.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

194. The range, variance, and standard deviation are all measures of:
(A) Variability or dispersion
(B) Central location
(C) Association
(D) Relative standing

195. What is the primary limitation of using mathematical extrapolation methods (like linear, geometric) for long-term population projections?
(A) They are too complex to calculate.
(B) They require too much detailed data on fertility and mortality.
(C) They assume that past trends will continue indefinitely into the future.
(D) They cannot be used for sub-national populations.

196. The shape of a population's age-sex structure is graphically represented by a:
(A) Lexis diagram
(B) Lorenz curve
(C) Scatter plot
(D) Population pyramid

197. Which of the following is a correct statement regarding population growth concepts?
(A) Doubling time is directly proportional to the growth rate.
(B) NRR = 1 indicates that the population size will immediately stop growing.
(C) Population stabilization implies a zero or near-zero growth rate.
(D) Arithmetic growth is more realistic for long-term population dynamics than exponential growth.

198. Which of the following is an example of 'extrapolation'?
(A) Estimating the population in 2016 using census data from 2011 and 2021.
(B) Estimating the population in 2025 using census data from 2011 and 2021.
(C) Calculating the average population between 2011 and 2021.
(D) Adjusting the 2011 census count for under-enumeration.

199. Consider the following dataset: {10, 12, 12, 15, 16, 18, 25}. What is the median?
(A) 12
(B) 14
(C) 16
(D) 15

200. The component method of population projection is also known as the:
(A) Cohort-component method
(B) Mathematical method
(C) Ratio method
(D) Regression method

201. The 'sampling distribution of the mean' refers to:
(A) The distribution of data values within a single sample.
(B) The way the sample was geographically distributed.
(C) The theoretical probability distribution of the means from all possible samples of a given size.
(D) The distribution of the population from which the sample was drawn.

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202. Which of the following organizations' projections are often used by demographers to create high, medium, and low variant scenarios of future population?
(A) United Nations
(B) World Health Organization
(C) International Labour Organization
(D) UNESCO

203. Which of the following is a correct pairing of a statistical test and its purpose?
(A) Linear Regression - To measure the central tendency of a single variable.
(B) Correlation Coefficient - To determine the cause-and-effect relationship between two variables.

(C) Standard Deviation - To estimate population size from a sample.
(D) Test of Significance - To assess the likelihood that an observed sample result is due to chance.

204. Which of the following conditions is required for a population to achieve 'stabilization' with a Net Reproduction Rate of unity?
(A) The sex ratio at birth must be exactly 100.
(B) The age structure must also be stable.
(C) Migration must be zero.
(D) The death rates must fall to zero.

205. Given below are two statements:
Statement I: Post-censual estimates are made for years following a census, using the census count as a base and adding subsequent components of change.
Statement II: Inter-censual estimates are made for years between two censuses and can be adjusted once the second census data becomes available.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

206. If the crude birth rate of a population is 30 per 1,000 and its crude death rate is 10 per 1,000, what is the rate of natural increase in percentage terms?
(A) 2%
(B) 4%
(C) 20%
(D) 2%

207. Which of the following statements about population pyramids is incorrect?
(A) It is a graphical representation of population density.
(B) The shape reflects the history of fertility, mortality, and migration.
(C) A wide base suggests a young population with high potential for future growth.
(D) The vertical axis represents age groups, and the horizontal axis represents population numbers or proportions.

208. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): Direct standardization requires knowing the age-specific rates of the populations to be compared.
Reason (R): The process involves applying these age-specific rates to the age structure of a single 'standard' population to see what the overall rate would be in each population if they had the same age structure.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

209. A study finds that the number of new COVID-19 cases in a city was 500 in the first week of June. This figure represents:
(A) Prevalence
(B) Incidence
(C) Population Density
(D) A person-year

210. Which of the following projection methods is most suitable for a long-term projection of the national population of a country with good vital registration data?
(A) Component method
(B) Linear extrapolation
(C) Polynomial curve fitting
(D) Logistic curve

211. Which one of the following is NOT an advantage of using the component method for population projection?
(A) It provides details on the future age-sex structure.
(B) It allows for scenario analysis by altering assumptions (e.g., high/low fertility).
(C) It has very low data requirements.
(D) It makes the demographic drivers of change explicit.

212. Consider the following statements regarding statistical concepts:
a. The mean is the arithmetic average.
b. The median is the middle value in an ordered list.

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c. The mode is the most frequent value.
d. The standard deviation is a measure of dispersion.
e. Correlation of +1.0 implies that one variable causes the other.

Which of the above statement(s) is/are correct?
(A) a, b, c, e
(B) a, b, d, e
(C) a, b, c, d
(D) b, c, d, e

213. The main difference between a crude rate and a standardized rate is that the standardized rate:
(A) Is easier to calculate.
(B) Is always a larger number.
(C) Accounts for differences in age structure.
(D) Does not require population data.

214. Which method of population projection involves fitting an equation of the form $y = a + bx + cx^2 + ...$ to a time series of population data?
(A) Logistic curve
(B) Polynomial curve
(C) Gompertz curve
(D) Component method

215. Consider the following projection concepts:
1. Use of simple arithmetic extrapolation.
2. Use of mathematical curves such as the logistic curve.
3. Widespread application of the cohort-component method.
4. Use of probabilistic projections with uncertainty intervals (e.g., by the UN).

Which of the following represents the correct chronological sequence?
(A) 1, 2, 3, 4
(B) 2, 1, 3, 4
(C) 1, 3, 2, 4
(D) 2, 3, 1, 4

216. A researcher has population counts for 1991, 2001, and 2011. An estimate of the population for 2005 would be a(n):
(A) Inter-censual estimate
(B) Post-censual estimate
(C) Projection
(D) Decadal growth rate

217. Match List I (Projection Method) with List II (Key Assumption).
List I:
P. Arithmetic
Q. Exponential
R. Logistic
S. Component
List II:
1. Growth is limited by a carrying capacity.
2. Growth is driven by explicit fertility, mortality, and migration rates.
3. The absolute number of people added each year is constant.
4. The rate of growth is constant, and compounding is continuous.

Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-4, R-1, S-2
(C) P-3, Q-1, R-4, S-2
(D) P-2, Q-3, R-1, S-4

218. In statistics, the process of drawing conclusions about a population based on data from a sample is called:
(A) Inference
(B) Descriptive statistics
(C) Data cleaning
(D) Summarization

219. Given below are two statements:
Statement I: The standard error of the mean is another name for the standard deviation of the population.
Statement II: A larger sample size generally leads to a smaller standard error of the mean.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

220. The 'doubling time' of a population is most directly a function of its:
(A) Crude death rate
(B) Growth rate
(C) Total size
(D) Median age

221. All of the following are typically projected using specific rates applied to a base population projection EXCEPT:

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(A) School enrolment
(B) Labour force
(C) Population density
(D) Households

222. In a Lexis diagram, a cohort is represented as a:
(A) Vertical line
(B) Horizontal line
(C) Single point
(D) Diagonal band

223. What does it mean if the Net Reproduction Rate (NRR) of a population is 1.5?
(A) The next generation of daughters will be 50% larger than the current generation of mothers.
(B) The population is shrinking by a factor of 50% during the span of each generation.
(C) Each individual woman is having exactly 1.5 total children on average during her lifetime.
(D) The specific target population will successfully achieve demographic stability in 1.5 generations.

224. Which of the following is the most significant limitation of a polynomial growth curve for population projection?
(A) It can only model linear trends.
(B) The curve can produce wildly unrealistic results when extrapolated far into the future.
(C) It requires data on births and deaths.
(D) It cannot be used for sub-national populations.

225. Which statement accurately describes the relationship between variance and standard deviation?
(A) The standard deviation is the square of the variance.
(B) The standard deviation is the positive square root of the variance.
(C) The variance is the square root of the standard deviation.
(D) The variance and standard deviation are unrelated measures.

226. What distinguishes a 'rate' from a 'ratio' in demography?
(A) A rate involves a measure of time in the denominator.
(B) A ratio can never be greater than one.
(C) A rate is expressed as a percentage, while a ratio is not.
(D) A ratio involves time, while a rate is a static measure.

227. Consider the following statistical processes:
a. Calculating the mean age of a population.
b. Creating a histogram of income levels.
c. Using a sample to estimate the national literacy rate.
d. Calculating the standard deviation of test scores.
e. Performing a hypothesis test to compare two groups.
Which of the above statement(s) is/are considered 'descriptive statistics'?
(A) a, b, c
(B) c, d, e
(C) a, b, d
(D) a, c, e

228. The 'Balancing Equation' is a fundamental concept used in which demographic method?
(A) Linear regression
(B) Standardization of rates
(C) Calculation of the standard deviation
(D) Component method of projection

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229. If the mean, median, and mode of a distribution are 50, 48, and 46 respectively, the distribution is said to be:
(A) Symmetrical
(B) Negatively skewed
(C) Positively skewed
(D) Bimodal

230. A projection of the number of households is typically derived by applying what rates to an age-sex population projection?
(A) Marital rates
(B) Headship rates
(C) Fertility rates
(D) Occupancy rates

231. The term "inductive statistics" is synonymous with:
(A) Descriptive statistics
(B) Mathematical statistics
(C) Applied statistics
(D) Inferential statistics

232. A key feature of the official population projections made by the Expert Committee for India is that they:
(A) Use the cohort-component method.
(B) Are based on simple mathematical extrapolation.
(C) Are updated every year.
(D) Ignore the component of internal migration for state-level projections.

233. Given below are two statements:
Statement I: The sex ratio is a demographic rate.
Statement II: The crude death rate is a demographic ratio.
Which of the following is correct?
(A) Both Statement I and Statement II are false.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

234. In hypothesis testing, what does a 'test of significance' evaluate?
(A) The strength of the evidence against the null hypothesis.
(B) The practical importance of the research findings.
(C) The probability that the null hypothesis is true.
(D) The accuracy of the data collection methods.

235. Which of the following projection methods intrinsically has an upper limit, preventing indefinite growth?
(A) Arithmetic
(B) Geometric
(C) Exponential
(D) Logistic

236. To compare the underlying mortality risk between Florida (with many retirees) and Alaska (with a young population), a demographer should use:
(A) Crude death rates
(B) Age-standardized death rates
(C) Total number of deaths
(D) Population density

237. The 'standard error' is a statistical measure of:
(A) The dispersion of data within a population.
(B) The systematic bias in a measurement instrument.
(C) The precision of a sample statistic as an estimate of the population parameter.
(D) The difference between the highest and lowest values in a sample.

238. Below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): The United Nations publishes multiple variants (e.g., low, medium, high) for its global population projections.
Reason (R): The future path of fertility is uncertain, and providing different variants allows users to understand the range of possible future outcomes.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

239. Which of the following is the best example of a demographic 'proportion'?
(A) The percentage of the population aged 65 and over.
(B) The number of men for every 100 women.
(C) The number of people per square kilometer.
(D) The number of deaths per 1,000 people per year.

240. The difference between an inter-censual estimate and a post-censual estimate is that:
(A) Inter-censual is another term for projection, while post-censual is an estimate.
(B) Inter-censual is for a date between two censuses, while post-censual is for a date after the last census.
(C) Post-censual is for a date between two censuses, while inter-censual is for a date after the last census.
(D) Inter-censual estimates are less accurate than post-censual estimates.

241. What is the primary purpose of calculating 'person-years'?
(A) To estimate the average age of a population.
(B) To calculate rates accurately when individuals are observed for different lengths of time.
(C) To project the number of elderly people in a

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future population.
(D) To create a population pyramid.

242. In a positively skewed distribution, what is the relationship between the mean, median, and mode?
(A) Mean > Median > Mode
(B) Mean = Median = Mode
(C) Mean < Median < Mode
(D) The relationship is unpredictable.

243. Which of the following is NOT required for a component method population projection?
(A) Base population by age and sex.
(B) Age-specific fertility rates.
(C) Past population totals for at least three time points.
(D) Age-specific mortality rates.

244. If a population is growing exponentially, a plot of the natural logarithm of the population against time will be a:
(A) Curved line
(B) S-shaped curve
(C) Parabola
(D) Straight line

245. Match List I (Projection Type) with List II (Key Rate).
List I:
P. Workforce projection
Q. School enrollment projection
R. Household projection
S. Population projection
List II:
1. Headship rate
2. Labor force participation rate
3. Net reproduction rate
4. Grade progression rate
Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-4, R-1, S-3
(C) P-3, Q-1, R-4, S-2
(D) P-4, Q-3, R-2, S-1

246. Which of these measures is most sensitive to outliers in a dataset?
(A) Median
(B) Mean
(C) Mode
(D) Interquartile range

247. The assumption of a constant amount of increase is central to which population growth model?
(A) Geometric
(B) Exponential
(C) Logistic
(D) Arithmetic

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248. Which of the following is true about correlation?
(A) It measures the strength and direction of a linear relationship.
(B) It proves causation.
(C) A correlation of -1 indicates no relationship.
(D) It can only be used with categorical data.

249. Consider the following statements regarding population projection methods:
a. The Component Method is data-intensive but provides detailed age-sex outputs.
b. The Logistic Curve assumes growth will slow and approach a carrying capacity.
c. The Arithmetic Method assumes a constant absolute increase.
d. Sub-national projections require accounting for internal migration.
e. The UN and World Bank produce globally used population projections.
Which of the above statement(s) is/are correct?
(A) a, b, c only
(B) a, c, d, e only
(C) c, d, e only
(D) a, b, c, d, e

250. Given below are two statements:
Statement I: The Lexis diagram is a tool for statistical hypothesis testing.
Statement II: A population pyramid is a two-dimensional graph for relating age, time, and demographic events.
Which of the following is correct?
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

Direction : Please read the following source carefully.

Fundamental demographic analysis relies on a precise set of measures to quantify population characteristics and dynamics. A ratio is the relation of one population subgroup

to another subgroup (e.g., sex ratio), while a proportion is the relation of a subgroup to the entire population. This is often expressed as a percentage by multiplying the proportion by 100. Rates measure the frequency of demographic events (e.g., births, deaths) within a population during a specified time period, typically a year. Unlike proportions, the numerator of a rate is not a subgroup of the denominator but rather the number of events that occur to that population. Key to calculating accurate rates is the concept of person-years, which represents the total time "at risk" experienced by all individuals in the population. For instance, in mortality analysis, it's the sum of the time each person was alive and at risk of dying. Measures like incidence and prevalence are also crucial. Incidence refers to the rate of new cases of a condition in a population over a period, while prevalence indicates the total number of cases (new and existing) at a specific point in time. Finally, density provides a spatial dimension, measuring population size relative to a specific land area.

Based on the above source, attempt the following five questions.

251. Which of the following best describes the relationship between a proportion and a percentage in demographic analysis?
(A) A percentage is a ratio of two distinct population subgroups.
(B) A percentage is a proportion multiplied by 100, expressing the subgroup's share of the total.
(C) A proportion is a percentage multiplied by 100 to express it per capita.
(D) A proportion and a percentage are identical measures of population density.

252. According to the text, what is the primary distinction between a demographic rate and a proportion?
(A) The numerator of a rate is the number of events, while the numerator of a proportion is a subgroup of the denominator.
(B) A rate is expressed as a percentage, whereas a proportion is not.
(C) A proportion measures the frequency of events, while a rate measures population subgroups.
(D) A rate is used for spatial analysis like density, whereas a proportion is used for temporal analysis.

253. The concept of "person-years" is most critical for calculating which of the following demographic measures?
(A) The ratio of one subgroup to another.
(B) The density of a population in a given area.
(C) Accurate rates of events like mortality.
(D) The total prevalence of a condition at a point in time.

254. A health survey finds that 500 out of 10,000 people have a particular chronic disease on January 1st, 2023. During the year, 50 new cases are diagnosed. The figure of 500 represents:
(A) The incidence of the disease.
(B) The person-years of the population.
(C) The rate of the disease.
(D) The prevalence of the disease.

255. If a researcher calculates the number of males per 100 females in a population, what specific demographic measure is being employed?
(A) A rate
(B) A proportion
(C) A ratio
(D) A density

Direction : Please read the following source carefully.

Understanding population growth is central to demographic analysis, and several mathematical models are used to describe its trajectory. The simplest model is arithmetic growth, which assumes a constant absolute increase in population size over each time period, resulting in a linear trend. A more realistic model for many populations is geometric growth, which assumes that the population increases by a constant proportion or factor during discrete time intervals, such as a year. This leads to a compound growth pattern. An extension of this is the exponential growth model, which assumes growth occurs continuously at a constant rate, rather than in discrete steps. This is often represented by the formula $P(t) = P(0)e^{(rt)}$. A practical application of these growth rates is the calculation of the decadal growth rate, which measures the percentage change in population over a ten-year census period. Another useful derivative concept is doubling time, which is the

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projected time it would take for a population to double in size, assuming its current growth rate remains constant. The ultimate goal for many population policies is population stabilization, a state where the population size ceases to grow or decline. This is conceptually linked to achieving a net reproduction rate (NRR) of unity (one), which signifies that, on average, a cohort of women is having just enough daughters to replace itself.

Based on the above source, attempt the following five questions.

256. Which model of population growth assumes a constant absolute increase in population size over each time period?
(A) Geometric growth
(B) Arithmetic growth
(C) Exponential growth
(D) Logistic growth

257. What is the primary difference between the geometric and exponential growth models as described in the passage?
(A) Geometric growth is linear, while exponential growth is compounding.
(B) Geometric growth is used for calculating doubling time, while exponential growth is not.
(C) Exponential growth applies to declining populations, while geometric growth applies to increasing populations.
(D) Geometric growth assumes discrete time intervals, while exponential growth assumes continuous growth.

258. The concept of a Net Reproduction Rate (NRR) of unity is most directly associated with which demographic state?
(A) Achieving population stabilization
(B) Calculating the decadal growth rate
(C) The initial phase of exponential growth
(D) The application of arithmetic growth models

259. A demographer calculates the time it will take for a country's population to increase from 50 million to 100 million at its current rate of increase. What concept is being calculated?
(A) Decadal growth rate
(B) Population stabilization
(C) Doubling time
(D) Arithmetic growth

260. If a population grows by a constant factor each year, its growth pattern is best described as:
(A) Geometric
(B) Arithmetic
(C) Linear
(D) Stable

Direction : Please read the following source carefully.

Demographic analysis often involves comparing fertility or mortality levels between different populations or within the same population over time. However, simple or crude rates, such as the crude birth rate or crude death rate, can be misleading. This is because they are influenced by the underlying age and sex structure of the population. For instance, a population with a higher proportion of elderly people will likely have a higher crude death rate than a younger population, even if the age-specific death rates are identical. To overcome this limitation, demographers use standardized methods for fertility and mortality estimates. Standardization is a statistical technique used to adjust crude rates to minimize or remove the effect of differences in population composition, typically age structure. This process results in standardized rates that provide a more comparable measure of the underlying risk of fertility or mortality. By applying the age-specific rates of the populations being studied to a single, common standard population structure, one can determine what the overall rate would be if the populations had identical compositions. This allows for a more accurate comparison of the phenomena of interest, independent of the confounding variable of population structure.

Based on the above source, attempt the following five questions.

261. According to the passage, why can crude rates be misleading when comparing different populations?
(A) They are difficult to calculate from census data.
(B) They do not account for migration patterns between the populations.
(C) They can only be used for fertility estimates, not mortality estimates.

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(D) They are influenced by the population's composition, such as its age structure.

262. What is the primary purpose of using standardized methods in demography?
(A) To project future population growth with greater accuracy.
(B) To adjust rates to allow for comparison by removing the effect of compositional differences.
(C) To increase the absolute value of crude birth and death rates.
(D) To calculate the crude death rate for a population with many young people.

263. The process of standardization, as described in the text, involves applying age-specific rates from study populations to what?
(A) Their own unique population structures.
(B) The crude death rate of a reference country.
(C) A single, common standard population structure.
(D) A theoretical model of a stable population.

264. A country with a large proportion of young adults and a low proportion of elderly people might exhibit which of the following, even with high age-specific mortality?
(A) A deceptively high standardized death rate.
(B) An inability to calculate a crude birth rate.
(C) A perfect correlation between fertility and mortality.
(D) A crude death rate that is lower than expected.

265. What is the main advantage of a standardized rate over a crude rate?
(A) It provides a more comparable measure of the underlying risk of an event.
(B) It is simpler to compute and explain to the public.
(C) It reflects the true absolute number of events in a population.
(D) It is always a higher value than the crude rate.

Direction : Please read the following source carefully.

In demographic analysis, accurately situating events like births, deaths, and migrations in time is fundamental. The Lexis diagram is a graphical tool designed specifically for this purpose, providing a framework for visualizing the location of an event in time. It is a two-dimensional grid, typically with calendar time (period) on the horizontal axis and age on the vertical axis. This structure allows demographers to simultaneously track three temporal dimensions: age, period, and cohort. A cohort refers to a group of individuals who experience the same demographic event during the same time interval, such as a birth cohort (all people born in the same year). On the Lexis diagram, the life path of an individual is represented by a diagonal line, known as a lifeline, that moves upwards and to the right as the person ages through time. Demographic events are plotted on these lifelines. This graphical representation is invaluable for untangling the distinct effects of age (biological and social maturation), period (influences affecting all ages at a specific time, like a famine or war), and cohort (influences specific to a group born in a particular era) on demographic rates and behaviors. It helps clarify the exact population at risk for certain events and improves the precision of rate calculations.

Based on the above source, attempt the following five questions.

266. What is the primary function of the Lexis diagram in demography?
(A) To project future population size using mathematical formulas.
(B) To graphically represent the location of demographic events in time.
(C) To display the geographic distribution of a population.
(D) To calculate standardized mortality rates for different cohorts.

267. On a standard Lexis diagram, what do the horizontal and vertical axes typically represent?
(A) Horizontal: Cohort; Vertical: Period
(B) Horizontal: Period (calendar time); Vertical: Age
(C) Horizontal: Age; Vertical: Number of events
(D) Horizontal: Number of individuals; Vertical: Calendar time

268. In the context of the Lexis diagram, what does the term "cohort" signify?
(A) A group of individuals experiencing the same event in the same time interval.

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(B) All individuals living in a specific geographical area.
(C) The total population at a single point in time.
(D) The biological and social maturation process of an individual.

269. How is the life path of an individual typically represented on a Lexis diagram?
(A) As a vertical line indicating a specific period.
(B) As a horizontal line indicating a constant age.
(C) As a diagonal line moving upwards and to the right.
(D) As a single point representing a specific event.

270. The Lexis diagram helps demographers to distinguish between which three distinct effects?
(A) Fertility, mortality, and migration
(B) Rate, ratio, and proportion
(C) Mean, median, and mode
(D) Age, period, and cohort

Direction : Please read the following source carefully.

Population projection, the estimation of future population size and structure, can be approached through various mathematical methods. These methods primarily rely on extrapolating past population trends into the future. The simplest form is Linear Projection, which assumes the population will continue to grow by the same absolute amount observed in the past, mirroring arithmetic growth. Another common approach is Exponential Projection, which assumes a constant rate of growth and is mathematically equivalent to the exponential growth model. This method is suitable for short-term projections where growth rates are relatively stable. For situations where growth is not constant, more complex models are available. Polynomial Growth Curves can be fitted to past population data to capture more complex, non-linear trends, but they can be unreliable for long-term forecasting. More sophisticated are S-shaped growth curves, which model a population that initially grows slowly, then accelerates, and finally slows down as it approaches a carrying capacity or saturation point. Two such curves mentioned in demographic analysis are the Gompertz and Logistic Growth Curves for Population Projection. The Logistic curve assumes a symmetrical S-shape, whereas the Gompertz curve is asymmetrical, with a slower rate of convergence as the population approaches its upper limit. The choice of method depends on the historical data pattern and the underlying assumptions about future growth.

Based on the above source, attempt the following five questions.

271. Which mathematical method of population projection assumes a constant absolute increase over time?
(A) Exponential Projection
(B) Logistic Growth Curve
(C) Linear Projection
(D) Gompertz Growth Curve

272. The Gompertz and Logistic Growth Curves are both examples of what type of projection model?
(A) Models that assume a constant rate of growth indefinitely.
(B) S-shaped curves that model populations approaching a limit.
(C) Linear models best suited for short-term extrapolation.
(D) Models based on discrete changes in population components.

273. According to the passage, what is a primary characteristic of an Exponential Projection?
(A) It assumes a decreasing rate of growth over time.
(B) It creates a symmetrical S-shaped curve.
(C) It is based on a polynomial function.
(D) It assumes a constant rate of growth.

274. What is the key difference described between the Gompertz and Logistic growth curves?
(A) The Logistic curve is symmetrical, while the Gompertz curve is asymmetrical.
(B) The Logistic curve is for short-term projections, while the Gompertz is for long-term.
(C) The Logistic curve assumes linear growth, while the Gompertz assumes exponential growth.
(D) The Logistic curve is a mathematical method, while the Gompertz is a component method.

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275. Polynomial Growth Curves are used to capture which type of population trend?
(A) Stable, non-growing trends.
(B) Strictly linear trends.
(C) Complex, non-linear trends.
(D) Symmetrical S-shaped trends.

Direction : Please read the following source carefully.

Beyond purely mathematical extrapolations, the Component Method of Population Projection offers a more nuanced and demographically detailed approach. This method projects future population by separately projecting the three components of population change: fertility, mortality, and migration. The process begins with a base population, disaggregated by age and sex. It then "ages" this population forward, one year or a five-year period at a time, by applying assumptions about future trends in age-sex-specific mortality rates. New births are added to the population by applying projected age-specific fertility rates to the female population in the reproductive age groups. Finally, assumptions about the volume and age-sex structure of net migration (immigrants minus emigrants) are incorporated. This method's strength lies in its ability to incorporate detailed demographic knowledge and assumptions about future component trends. Its applications are versatile, extending to sub-national population projection (e.g., for states or districts) where migration is often a more significant component of change. Furthermore, the component method's outputs can be used for more specialized projection methods of labour force, school enrolment, workforce and households, by applying specific participation or enrolment rates to the projected age-sex structure of the population.

Based on the above source, attempt the following five questions.

276. What are the three core components of population change that are separately projected in the component method?
(A) Fertility, mortality, and migration
(B) Age, sex, and location
(C) Linear, exponential, and logistic growth
(D) Labour force, school enrolment, and households

277. The component method of population projection begins with what essential piece of information?
(A) A projected net reproduction rate.
(B) A mathematical growth curve like Gompertz or Logistic.
(C) The total number of households in the base year.
(D) A base population disaggregated by age and sex.

278. The projection of the future labour force and school enrolment are described as applications that build upon what output of the component method?
(A) The assumptions made about net migration.
(B) The projected age-sex structure of the population.
(C) The historical trends in fertility rates.
(D) The initial base population size only.

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279. According to the passage, why is the component method particularly useful for sub-national population projections?
(A) It is less complex than mathematical methods.
(B) It requires less data about the base population.
(C) It can better account for migration, which is often more significant at this level.
(D) It is the only method that can project household numbers.

280. How are new births added to the population in the component method?
(A) By extrapolating the total number of births from previous years.
(B) By assuming a constant crude birth rate for the entire population.
(C) By using a logistic growth curve to model the increase in the youngest age group.
(D) By applying projected age-specific fertility rates to the female population.

Direction : Please read the following source carefully.

Official population projections are vital for national and international planning, resource allocation, and policy formulation. Several key organizations are recognized for their role in producing these authoritative forecasts. The United Nations (UN), particularly through its

Population Division, produces comprehensive global population projections for all countries, which are widely used as a benchmark standard. The UN typically provides multiple projection variants (e.g., low, medium, high fertility) to reflect uncertainty about future demographic trends. Similarly, the World Bank generates its own set of population projections, which are integral to its economic modeling, development reports, and project planning. These projections often focus on demographic variables that are closely linked to economic development. Within India, the Expert Committee of the Government of India is tasked with producing official population projections for the nation and its sub-national units (states and union territories). These national-level projections are formulated by an expert group, often constituted by the Registrar General of India, and are crucial for the planning processes of the central and state governments, including the allocation of financial resources and the setting of developmental targets. The methodologies employed by these bodies, while generally based on the component method, may differ in their specific assumptions regarding future fertility, mortality, and migration trajectories, leading to slight variations in their projected outcomes.

Based on the above source, attempt the following five questions.

281. Which organization is mentioned as producing comprehensive global population projections that serve as a widely used benchmark?
(A) The United Nations
(B) The World Bank
(C) The Expert Committee of the Government of India
(D) The Registrar General of India

282. The population projections generated by the World Bank are described as being particularly integral to which of its activities?
(A) Conducting global census operations.
(B) Its economic modeling and development project planning.
(C) Setting international migration laws.
(D) Publishing daily demographic statistics.

283. In the context of India, which body is specifically tasked with creating official population projections for national and sub-national planning?
(A) The United Nations Population Division
(B) The Expert Committee of the Government of India
(C) The World Bank's South Asia Division
(D) A consortium of independent demographic research institutes

284. The United Nations often provides low, medium, and high projection variants to address what specific aspect of forecasting?
(A) The uncertainty surrounding future demographic trends.
(B) The certainty about past population figures.
(C) The different mathematical models being used.
(D) The variation in population density across regions.

285. What is the most likely reason for potential variations in the projection outcomes from the UN, World Bank, and the Government of India?
(A) The use of entirely different projection paradigms (mathematical vs. component).
(B) A fundamental disagreement on the current population size.
(C) Differences in their specific assumptions about future fertility, mortality, and migration.
(D) The use of different base years for their projections.

Direction : Please read the following source carefully.

While population projections forecast future trends, population estimates are concerned with determining population size for a current or date where a census was not conducted. These estimates are crucial for administrative and planning purposes in the years between official censuses. A common type is the post-censual estimate, which updates the population from the last census forward to a more recent date by adding births, subtracting deaths, and accounting for net migration that occurred since the census. Conversely, inter-censual estimates are produced for a date that falls between two completed censuses. These are generally considered more accurate than post-censual estimates because they can be adjusted using data from both the

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earlier and later censuses, anchoring the estimate at both ends. A powerful tool for visualizing the output of these estimates is the population pyramid. This is a graphical illustration that shows the distribution of a population by age and sex at a specific point in time. Typically, it is a pair of back-to-back histograms, with the male population on the left and the female population on the right, and age groups stacked vertically from youngest at the bottom to oldest at the top. The shape of the pyramid provides immediate insights into a population's history and future prospects, revealing, for example, a young and growing population or an aging population.

Based on the above source, attempt the following five questions.

286. What is the primary difference between a population projection and a population estimate?
(A) Projections are for the past, while estimates are for the future.
(B) Projections use the component method, while estimates use mathematical methods.
(C) Projections are always more accurate than estimates.
(D) Projections forecast future populations, while estimates determine population for a past or current date without a census.

287. An estimate of India's population for the year 2017, created using data from both the 2011 and 2021 censuses, would be classified as what type of estimate?
(A) A post-censual estimate
(B) A population projection
(C) An inter-censual estimate
(D) A census enumeration

288. What is a population pyramid?
(A) A mathematical formula for estimating post-censual population.
(B) A graphical illustration of population distribution by age and sex.
(C) A table showing population density across different regions.
(D) A method for projecting future school enrolments.

289. According to the text, why are inter-censual estimates generally considered more accurate than post-censual estimates?
(A) They rely on more advanced mathematical formulas.
(B) They are produced by more reputable international organizations.
(C) They do not need to account for births and deaths.
(D) They can be adjusted using data from two censuses, anchoring the estimate.

290. On a standard population pyramid, how are the age groups typically arranged?
(A) Youngest at the bottom, oldest at the top.
(B) Youngest at the top, oldest at the bottom.
(C) In alphabetical order.
(D) In random order to avoid age bias.

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Direction : Please read the following source carefully.

In demographic research, it is often impractical to study an entire population. Instead, a sample is selected, and findings from this sample are used to make inferences about the whole. This involves distinguishing between population and sample parameters. A parameter is a characteristic of the entire population (e.g., the true mean age of all citizens), while a statistic is a characteristic of the sample (e.g., the mean age of the sampled citizens). The core of statistical inference lies in understanding how well a sample statistic, such as the sample mean, estimates the population parameter. The sampling distribution of the mean is a theoretical concept describing the distribution of sample means that would be obtained from all possible samples of a given size drawn from a population. According to the Central Limit Theorem, this distribution tends to be normal, centered around the true population mean. The variability of this sampling distribution is measured by the standard error. The standard error of the mean quantifies the typical or average distance between the sample means and the population mean. A smaller standard error implies that the sample means are clustered closely around the population mean, indicating that any single sample mean is likely to be a more precise estimate of the population parameter. It is a crucial measure of the uncertainty or margin of error associated with a sample-based estimate.

Based on the above source, attempt the following five questions.

291. What is the fundamental difference between a population parameter and a sample statistic?
(A) A parameter describes a sample, while a statistic describes a population.
(B) Parameters are used in descriptive statistics, while statistics are used in inductive statistics.
(C) A parameter is a characteristic of a population, while a statistic is a characteristic of a sample.
(D) Parameters have a standard error, while statistics do not.

292. The theoretical distribution of all possible sample means for a given sample size is known as the:
(A) Sampling distribution of the mean
(B) Frequency distribution
(C) Population pyramid
(D) Standard error distribution

293. What does the standard error of the mean measure?
(A) The average value of the data in a single sample.
(B) The total size of the population from which a sample is drawn.
(C) The correlation between two different sample statistics.
(D) The variability or average distance of sample means from the true population mean.

294. A researcher calculates the mean age of 1,000 randomly selected individuals to estimate the mean age of the entire country. The mean age of the 1,000 individuals is an example of a:
(A) Population parameter
(B) Sample statistic
(C) Standard error
(D) Sampling distribution

295. According to the text, what does a smaller standard error imply?
(A) The sample size is too small to be useful.
(B) The population from which the sample was drawn is not normally distributed.
(C) The sample mean is likely a more precise estimate of the population mean.
(D) The sample statistic is a poor estimate of the population parameter.

Direction : Please read the following source carefully.

Statistical methods are indispensable tools for analyzing demographic data. These methods can be broadly categorized into descriptive and inductive statistics. Descriptive statistics summarize and organize data, using tools like frequency distribution tables and measures of central tendency and dispersion. Measures of central tendency, such as the mean (arithmetic average), median (the middle value), and mode (the most frequent value), provide a single value to represent the center of a distribution. Measures of dispersion, including the range (difference between the highest and lowest values), variance, and standard deviation (a measure of the average spread around the mean), describe how spread out the data are. Inductive statistics, or inferential statistics, go a step further by using sample data to make generalizations about a larger population. This includes methods like correlation and linear regression, which examine the relationship and association between two or more variables. For instance, regression can model how a dependent variable changes as an independent variable changes. Furthermore, inductive statistics involve the testing of statistical hypothesis and test of significance, which provide a formal framework for determining if an observed effect or relationship in a sample is statistically significant or likely due to chance. Finally, techniques like interpolation and extrapolation are used to estimate unknown values that fall within (interpolation) or outside (extrapolation) a range of known data points.

Based on the above source, attempt the following five questions.

296. The calculation of the mean, median, and mode for a dataset falls under which category of statistical measures?
(A) Measures of dispersion
(B) Correlation and regression
(C) Hypothesis testing
(D) Measures of central tendency

297. Which of the following is an example of a measure of dispersion?
(A) The standard deviation

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(B) The mode
(C) The median
(D) The mean

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298. What is the primary purpose of inductive statistics, as described in the passage?
(A) To simply summarize and describe the characteristics of a given dataset.
(B) To use sample data to make generalizations about a larger population.
(C) To create frequency distribution tables and charts.
(D) To calculate the range of a dataset.

299. A demographer wants to model the relationship between years of education and income level to predict income based on education. Which statistical method would be most appropriate?
(A) A measure of central tendency like the median.
(B) Linear regression.
(C) A frequency distribution.
(D) A measure of dispersion like the range.

300. The process of estimating a value that lies between two known data points is called:
(A) Interpolation
(B) Extrapolation
(C) Hypothesis testing
(D) Standard deviation

ANSWERS

1. (B) The frequency of a specific demographic event occurring in a defined population during a designated period.
A demographic rate identifies the frequency of occurrence of specific events, such as births or deaths, relative to the population exposed to the risk of that event within a specified timeframe. It typically utilizes the mid-year population as the denominator to account for continuous changes. This measure provides a standardized way to compare the intensity of demographic processes across different populations or time intervals.

2. (A) Ratio
A ratio represents a mathematical relationship between two independent quantities, where one subgroup is compared to another or to the entire population. Unlike proportions, the numerator in a ratio is not necessarily a subset of the denominator. Common examples include the sex ratio or dependency ratio. This measure facilitates direct comparisons between distinct demographic segments without requiring the groups to be mutually exclusive parts.

3. (C) A ratio cannot have a value greater than one.
Ratios compare two distinct quantities and are not mathematically restricted to values below unity. While proportions must stay between zero and one because the numerator is a subset of the denominator, ratios like the child-woman ratio or sex ratio frequently exceed one depending on the population structure. This flexibility allows demographers to express the relative size of one demographic group compared to another distinct group.

4. (A) Both Statement I and Statement II are true.
The arithmetic growth model describes population increase by a fixed absolute amount over each unit of time, resulting in a linear trend. In contrast, the geometric growth model assumes that population increases at a constant percentage rate at specific intervals, such as annually. Both models represent fundamental mathematical approaches to simulating population dynamics, with the geometric model accounting for the compounding effect of growth over time.

5. (C) The time it takes for a population to increase by 100%.
Doubling time is a demographic metric representing the number of years required for a specific population to double its initial size, assuming a constant growth rate. This concept is closely linked to the rate of natural increase and is often estimated using the rule of seventy. It serves as a practical indicator for assessing the speed of population growth and the resulting pressures on resources.

6. (A) P-4, Q-3, R-1, S-2
Demographic measures are categorized into specific types based on their mathematical properties. The crude birth rate is a rate because it tracks events over time. Population density is a measure of concentration per unit area. The sex ratio compares two groups, making it a ratio. Finally, the proportion of urban population identifies a subgroup's share of the total population, fitting the definition of a proportion.

7. (D) Rates when the population at risk changes continuously over a period.
Person-years represent a cumulative measure of time that individuals in a study population are at risk of experiencing a specific event. This concept is vital for calculating accurate rates when the size of the population fluctuates due to births, deaths, or migration. By accounting for the exact duration of exposure for each individual, demographers can derive more precise intensity measures for various demographic phenomena.

8. (A) Both A and R are true and R is the correct explanation of A.
Standardization is a critical statistical technique used to eliminate the confounding effects of age and sex distributions when comparing demographic rates across different populations. Crude rates are often misleading because they do not account for structural differences; for example, an older population naturally has

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a higher crude death rate. By applying age-specific rates to a standard population structure, researchers can make meaningful comparative analyses.

9. (C) To display the relationship between events, age, and time.
A Lexis diagram is a two-dimensional coordinate system used by demographers to visualize and analyze the relationship between three fundamental variables: time, age, and cohort. It allows for the precise location of demographic events, such as births or deaths, within these dimensions. This tool is essential for understanding how specific groups age over time and for tracking the history of various demographic cohorts.

10. (A) a and b only
The component method, also known as the cohort-component method, is a sophisticated approach to population projection. It works by projecting individual age and sex cohorts into the future based on specific assumptions regarding fertility, mortality, and migration. Unlike simple mathematical models that extrapolate total population trends, this method explicitly considers the demographic drivers of change, making it highly useful for detailed national and regional planning.

11. (D) At exact replacement level.
The Net Reproduction Rate measures the average number of daughters that would be born to a female cohort if they were subject to specific fertility and mortality rates. When this rate equals unity, it signifies that each generation of mothers is exactly replacing itself with a generation of daughters who survive to childbearing age. This condition represents the demographic threshold for long-term population stability, known as replacement-level fertility.

12. (B) Logistic model
The logistic model of population growth is characterized by a symmetric S-shaped curve that describes how a population grows over time. Initially, growth is slow, then it accelerates during the middle phase, and finally decelerates as it approaches a predefined carrying capacity or upper limit. This model is frequently used in demographic projections to represent growth within an environment with finite resources or constraints.

13. (A) 2, 5, 1, 3, 4
Executing the component method requires a logical sequence of steps starting with establishing a reliable base population categorized by age and sex. Demographers then survive this base population forward using mortality assumptions to determine deaths. Subsequently, births are projected based on fertility rates and added to the youngest age group. Finally, net migration assumptions are incorporated to complete the projection for each specific age and sex cohort.

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14. (D) The rate at which new cases of a disease occur in a population during a specified period.
Incidence serves as a measure of the risk of developing a specific health condition within a population over a defined period. It focuses exclusively on the occurrence of new cases among individuals who were previously unaffected. This metric is essential for understanding the speed of disease transmission and for evaluating the effectiveness of preventive health interventions aimed at reducing the frequency of new infections.

15. (A) Incidence is a rate, while prevalence is a proportion representing cases at a point in time.
Incidence and prevalence represent distinct concepts in epidemiology and demography. Incidence is a rate that tracks the development of new cases over a duration, indicating the risk of disease occurrence. Prevalence is a proportion that measures the total burden of a disease by including both new and existing cases at a specific point in time. These measures are fundamental for health resource planning and monitoring.

16. (B) A pyramid that is narrow at the base and wider at the top suggests an aging population.
Population pyramids provide a visual representation of the age-sex distribution of a population. A pyramid with a narrow base indicates low fertility levels, while a broad top reflects high life expectancy and a significant proportion of elderly individuals. This shape is characteristic of societies undergoing an advanced stage of demographic transition, where the population is aging and the growth rate is typically low.

17. (B) Range
Measures of central tendency, such as the mean, median, and mode, are used in statistics to identify a single representative value that describes the center of a data distribution. The range, however, is a measure of dispersion that calculates the difference between the maximum and minimum values in a dataset. It provides information about the spread or variability of the data rather than its central location.

18. (A) Mean
The arithmetic mean is highly sensitive to extreme values, commonly known as outliers, because its calculation involves every individual data point in the set. A single very large or very small value can significantly shift the mean away from the bulk of the data. In contrast, the median and mode are more robust measures of central tendency as they are determined by position or frequency.

19. (C) a, b, c, e
Statistical analysis is divided into descriptive and inductive branches. Descriptive statistics utilize measures of central tendency and dispersion to summarize data, while inductive statistics allow for generalizations from samples to populations. Concepts like correlation and regression explore variable relationships. However, incidence and prevalence are specific measures of disease frequency and burden rather than overall population growth, which is typically measured by rates of natural increase.

20. (D) The variability of sample means around the true population mean.
The standard error of the mean provides a measure of how much the sample mean is expected to vary from the actual population mean. It represents the standard deviation of the sampling distribution of the mean. This statistic is crucial in inferential statistics for determining the precision of an estimate and for constructing confidence intervals, helping researchers understand the reliability of their sample findings.

21. (C) The change in Y for a one-unit change in X.
In a linear regression equation, the coefficient of the independent variable represents the slope of the line. This value quantifies the expected change in the dependent variable for every single-unit increase in the independent variable. It indicates the strength and direction of the linear relationship between the two variables, serving as a fundamental tool for prediction and for understanding how variables interact within a dataset.

22. (A) Both A and R are true and R is the correct explanation of A.
The geometric growth model is often preferred for long-term population analysis because it accounts for the compounding effect where the growth from previous periods is added to the base for subsequent growth. This approach more accurately reflects biological reality compared to the arithmetic model, which assumes a constant absolute increase. The geometric assumption acknowledges that a larger population has the potential to produce more individuals.

23. (D) Mathematical extrapolation using a linear or exponential curve.
When data is limited to total population counts from past censuses without detailed information on age, sex, or vital events, mathematical extrapolation is the most feasible method for population projection. By fitting a linear or exponential curve to the historical data, researchers can estimate future population sizes based on observed trends. This approach is practical for small areas where the detailed data required for component methods is unavailable.

24. (B) P-4, Q-1, R-2, S-3
Different types of demographic projections rely on specific inputs and concepts. School enrollment projections utilize entry and progression rates to estimate future student numbers. Labor force projections apply participation rates to the working-age population. Household projections often use headship rates to determine the number of family units. Sub-national projections are more complex, requiring detailed data on regional fertility, mortality, and migration differentials to ensure accurate local estimates.

25. (C) Interpolation
Interpolation is a mathematical technique used to estimate unknown values that fall within the range of a set of known data points. In demography, this is frequently used to estimate

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the population for years between decennial censuses. It assumes a specific pattern of change, such as linear or geometric, between the established points. This process differs from extrapolation, which involves estimating values beyond the existing range of data.

26. (A) Generalizing from specific sample data to reach conclusions about an entire population.
Inductive statistics, also known as inferential statistics, involve using observations from a representative sample to make broader conclusions or predictions about the entire population. This process includes hypothesis testing and the calculation of confidence intervals. It allows researchers to draw meaningful insights and make informed decisions about large groups when it is impractical or impossible to collect data from every individual within that population.

27. (A) Both Statement I and Statement II are true.
International organizations like the United Nations and the World Bank provide critical population projections for global planning. The United Nations publishes multiple variants to account for uncertainties in future fertility trends, offering high, medium, and low scenarios. The World Bank also produces projections, which are often integrated with economic development models to provide a comprehensive view of how demographic changes might influence future workforce and economic outcomes.

28. (B) Mode - The arithmetic average of all values in a distribution.
Statistical measures each have unique definitions and purposes. The mode is the value that appears most frequently in a dataset, not the arithmetic average. The mean is the measure representing the arithmetic average. Other measures include variance, which quantifies the average squared deviation from the mean, and standard deviation, its square root. The range identifies the total spread between the highest and lowest scores in the distribution.

29. (B) c and d only
Demographic estimation utilizes various methods to determine population size between or after census dates. Inter-censual estimates, which cover the period between two established census points, are generally more accurate because they can be adjusted based on the final census count. A population pyramid is a standard graphical tool for representing age-sex structures. Note that post-censual refers to dates after the last census, while inter-censual refers to periods between censuses.

30. (D) An asymmetrical S-shape where growth is slower at the beginning and end than in the middle.
The Gompertz curve is a mathematical model used in demography and actuarial science to represent population growth or mortality patterns. It is characterized by an asymmetrical S-shape, meaning the rate of growth accelerates and decelerates at different speeds. Unlike the symmetric logistic curve, the Gompertz curve better reflects certain real-world growth dynamics where the approach to the carrying capacity occurs more gradually than the initial acceleration phase.

31. (A) To determine the probability that an observed effect in a sample is due to random chance.
Tests of significance are fundamental tools in inferential statistics used to evaluate whether an observed finding in a sample is likely to represent a real effect in the population or is simply a result of random sampling variation. By calculating a p-value, researchers can decide whether to reject the null hypothesis. This process provides a rigorous mathematical framework for drawing conclusions about population parameters based on limited sample evidence.

32. (B) The Expert Committee on Population Projections, Government of India
In India, the responsibility for generating official population projections lies with a specialized Technical Group or Expert Committee constituted by the government. This committee utilizes the latest census data and detailed assumptions regarding fertility, mortality, and migration to produce national and state-level projections. These figures are essential for long-term socio-economic planning and for the allocation of resources by various government departments and international agencies.

33. (B) Range
The range is the simplest measure of dispersion in statistics, calculated by subtracting the lowest

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value in a dataset from the highest value. It provides a quick assessment of the total spread of the data. While easy to calculate, the range is highly sensitive to outliers and does not provide information about the distribution of values between the two extremes, unlike more sophisticated measures like variance or standard deviation.

34. (A) Arithmetic Projection
Arithmetic projection is a mathematical method based on the assumption that a population will continue to grow by a constant absolute number of people over each time period. This amount is typically derived from the average annual increase observed between two previous census dates. While simple to use, this method assumes a linear trend and does not account for the compounding effect of growth, making it most suitable for short-term estimates.

35. (C) The population growth rate becomes zero or near zero.
Population stabilization refers to a demographic state where the size of a population remains relatively constant over time. This occurs when the number of births plus immigrants is approximately equal to the number of deaths plus emigrants, resulting in a growth rate of zero. Achieving stabilization is a long-term goal for many countries and is typically reached after a population completes its demographic transition and maintains replacement-level fertility.

36. (A) 2, 3, 4, 1
Mathematical population growth models vary in complexity based on their underlying assumptions. The linear model is the simplest, assuming a constant absolute increase. The exponential model assumes a constant relative rate of continuous growth. Polynomial models allow for more flexible trends using higher-degree equations. The logistic model is the most complex among these, as it incorporates the biological concept of a carrying capacity to represent growth in a resource-limited environment.

37. (C) The entire population.
In statistics, a parameter is a numerical value that describes a characteristic of an entire population, such as the population mean or standard deviation. Because it is often impossible to measure every individual in a population, researchers calculate statistics from samples to estimate these parameters. A population parameter is considered a fixed but often unknown value, whereas sample statistics vary depending on the specific sample selected for study.

38. (B) The independent and dependent variables must be categorical.
Simple linear regression is a statistical method used to model the relationship between a continuous dependent variable and a continuous independent variable. Key assumptions include a linear relationship between the variables, normally distributed residuals, and constant variance of those residuals, known as homoscedasticity. If the variables are categorical, other types of analysis, such as logistic regression or chi-square tests, are more appropriate than the simple linear regression model.

39. (D) The median is always the most frequent value in a dataset.
Statistical measures have distinct roles in data analysis. Descriptive statistics summarize data, while inductive statistics allow for inferences about populations. A frequency distribution organizes data to show how often values occur. The median is the middle value in an ordered dataset and is not necessarily the most frequent. The value that occurs most often is defined as the mode. These measures of central tendency provide different perspectives on data.

40. (D) A is false but R is true.
In a Lexis diagram, the horizontal axis represents time in calendar years, and the vertical axis represents age. Therefore, the life of an individual aging over time is represented by a diagonal line with a slope of one, moving upwards and to the right. A horizontal line would represent a fixed age across different time periods. This diagram is essential for visualizing the relationships between period, age, and cohort events.

41. (C) They are influenced by the age structure of the populations.
Crude death rates are calculated by dividing the total number of deaths by the total population, making them highly sensitive to the age structure. A population with a high proportion

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of elderly individuals will naturally have a higher crude death rate than a younger population, even if health conditions are similar. This limitation makes crude rates unsuitable for direct mortality comparisons between countries, requiring the use of age-standardized rates for accuracy.

42. (A) Component method
The component method, or cohort-component method, is the most comprehensive approach to population projection as it explicitly accounts for the three drivers of demographic change: fertility, mortality, and migration. By making separate assumptions for each component and applying them to age-sex cohorts, this method provides detailed insights into the future size and structure of a population. This contrasts with mathematical models that treat population growth as a single trend.

43. (A) a, b, c, d
Measures of central tendency include the mode, which is the most frequent value; the median, the middle value in an ordered set; and the mean, the arithmetic average. In a perfectly symmetrical distribution, these three measures coincide. Importantly, the median is a robust statistic, meaning it is not highly sensitive to extreme outliers, unlike the mean. Understanding these properties is crucial for selecting the appropriate measure to describe a dataset.

44. (B) The percentage change in population size between two censuses held ten years apart.
The decadal growth rate measures the relative increase or decrease in a population over a ten-year period, typically between two consecutive censuses. It is expressed as a percentage of the initial population size. This metric provides a clear indication of how rapidly a population is changing over a decade, allowing for comparisons across different regions or time periods to assess demographic trends and the effectiveness of population policies.

45. (C) A strong negative linear relationship.
The correlation coefficient, ranging from negative one to positive one, indicates the strength and direction of a linear relationship between two variables. A value of negative 0.9 signifies a very strong negative correlation, meaning that as one variable increases, the other decreases in a highly consistent linear manner. The closer the value is to negative one or positive one, the stronger the association, while values near zero indicate no linear relationship.

46. (D) Population grows continuously at a constant rate.
The exponential growth model assumes that a population increases continuously at a constant relative rate, with growth compounded at every instant. This results in a J-shaped curve when population size is plotted against time. This model is often used to describe populations growing without constraints. It differs from the geometric model, which assumes growth occurs at discrete intervals, and the arithmetic model, which assumes a constant absolute increase each year.

47. (A) P-4, Q-1, R-3, S-2
Demographic and statistical measures are defined by specific formulas. A proportion represents a part of a whole, where the numerator is included in the denominator. A rate measures the occurrence of events relative to a population at risk over time. A ratio compares two independent quantities. A percentage is simply a proportion scaled by 100. Understanding these mathematical distinctions is essential for the correct application and interpretation of various demographic indicators.

48. (B) Sub-national school enrolment projection.
Estimating future numbers of specific age groups, such as school-aged children within a district, is a typical application of sub-national school enrollment projections. This process involves applying current or projected enrollment and progression rates to a population projection for that specific local area. Such projections are vital for local government planning, allowing for the informed allocation of resources like school buildings, teachers, and educational materials for the upcoming years.

49. (A) Both Statement I and Statement II are true.
Population pyramids provide visual clues about a society's demographic and economic status. A bulge in the working-age groups can lead to a demographic dividend, potentially boosting economic growth if the workforce is productively employed. Conversely, a narrow top indicates

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high mortality rates or low life expectancy among the elderly. These structural features reflect historical and current demographic trends, offering insights into the future challenges and opportunities a country may face.

50. (A) The age-specific death rates of the populations being compared.
The direct method of standardization is used to compare mortality across populations with different age structures. It requires the age-specific death rates for each population being compared. These rates are then applied to the age distribution of a common standard population to calculate what the overall death rate would be if each population shared that standard structure. This process effectively removes age as a confounding factor in the comparative analysis.

51. (C) Component method
Population projection techniques are broadly categorized into mathematical and component methods. Mathematical methods, such as the logistic, Gompertz, and polynomial growth curves, use equations to model total population trends based on historical data. The component method, however, is a demographic approach that explicitly simulates future population size and structure by accounting for separate changes in fertility, mortality, and migration. It is generally considered more robust but requires significantly more detailed data.

52. (D) The probability distribution of a statistic obtained from all possible samples of a specific size.
A sampling distribution is a theoretical probability distribution of a specific statistic, such as the mean, derived from every possible sample of a given size that could be drawn from a population. It describes how the statistic would vary from one sample to another. This concept is fundamental to inferential statistics, as it allows researchers to determine the likelihood of obtaining a particular sample result and to estimate population parameters with confidence.

53. (C) It incorporates a carrying capacity or upper limit to growth.
The logistic growth curve is a mathematical model that represents population growth in a resource-limited environment. Its key feature is the inclusion of a carrying capacity, which is the maximum population size that the environment can sustain indefinitely. As the population approaches this limit, the growth rate slows down, resulting in a characteristic S-shaped curve. This model is more realistic for long-term projections than models assuming unlimited, continuous exponential growth.

54. (B) Extrapolation
Extrapolation is a statistical method used to estimate values that lie outside the range of established data points by extending observed trends into the future or the past. In demography, it is frequently used to project future population sizes based on historical census data. While useful, extrapolation assumes that the underlying patterns will remain constant, which can lead to inaccuracies if significant demographic or environmental changes occur beyond the period of observation.

55. (D) The standard deviation measures the average spread of data points around the mean.
The standard deviation is a fundamental measure of dispersion that quantifies how much individual data points in a distribution typically deviate from the arithmetic mean. It is calculated as the positive square root of the variance. Because it is expressed in the same units as the original data, it provides an intuitive measure of variability. Unlike the range, it considers every data point, making it a more comprehensive indicator of data spread.

56. (D) a, b, c, and d
Calculating person-years of observation requires detailed information about the duration each individual remains in a study population. This involves knowing the initial population size, as well as the specific dates when individuals enter (through birth or immigration) and leave (through death or emigration). By summing these individual periods of exposure, demographers can determine the total time the population was at risk of experiencing events, allowing for the calculation of accurate rates.

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57. (A) Both A and R are true and R is the correct explanation of A.
Inter-censual estimates are considered more reliable than post-censual estimates because they

are bounded by two actual census counts. This allows demographers to account for the "closing error"—the difference between the estimated and actual population at the time of the second census. By distributing this error across the intervening years, the estimates are adjusted to align perfectly with both census points, providing a more accurate representation of population change.

58. (A) A birth cohort aging together through time.
In a Lexis diagram, time is plotted on the horizontal axis and age on the vertical axis. A diagonal line moving upwards and to the right represents the life path of an individual or a group of individuals born at the same time, known as a birth cohort. As they move forward in years, they also increase in age, creating a 45-degree line. This visualization is essential for tracking cohort-specific demographic events over time.

59. (D) The number of daughters a newborn girl is expected to bear, surviving to the age of her mother.
The Net Reproduction Rate is a refined measure of population replacement that accounts for both fertility and mortality. It represents the average number of daughters a newborn girl would have during her lifetime, assuming she is subject to current age-specific fertility and mortality rates. An NRR of one indicates that the population is exactly replacing itself. This measure provides a clearer picture of long-term population growth potential than crude birth rates.

60. (A) 4, 3, 2, 1
Population estimation follows a logical chronological order based on the availability of census data. First, the 2011 census provides the base population. An inter-censual estimate for 2015 is then made between the two census points. The 2021 census follows, providing a second anchor point. Finally, a post-censual estimate for 2023 is produced by extending the trends from the most recent census. This sequence ensures estimates are grounded in the latest data.

61. (C) The proportion of individuals in each age-sex group who are heads of households.
The headship rate method is a common technique for projecting the number of households in a population. It is based on the calculation of headship rates, which represent the proportion of individuals in specific age and sex groups who are identified as heads of households. By applying these projected rates to a future age-sex population projection, demographers can estimate the total number of households and their characteristics, aiding in housing and urban planning.

62. (D) 20%
The decadal growth rate measures the percentage change in population size over a ten-year period. It is calculated by taking the absolute increase in population, dividing it by the population at the beginning of the decade, and then multiplying by one hundred. In this scenario, the population increased by 200,000 from an initial 1,000,000, which results in a twenty percent growth rate. This metric is a standard way to express population dynamics between censuses.

63. (A) Standard Deviation
Measures of dispersion, such as standard deviation, variance, and range, quantify the degree of spread or variability within a dataset. Standard deviation specifically measures the average distance of each data point from the arithmetic mean, providing an indicator of how consistent or varied the data is. In contrast, the mean, median, and mode are measures of central tendency, which identify a single central value that represents the entire data distribution.

64. (A) P-2, Q-4, R-3, S-1
Statistical concepts have specific practical applications in research. Descriptive statistics summarize sample data through measures like the mean age. Inductive statistics allow researchers to generalize findings from a sample to an entire population. Correlation is used to measure the strength and direction of the linear relationship between two variables. Linear regression takes this further by enabling the prediction of a dependent variable's value based on the known value of an independent variable.

65. (A) Both Statement I and Statement II are true.
Population growth is mathematically modeled using different compounding assumptions. The geometric growth model assumes that a population increases by a constant rate compounded at discrete intervals, typically

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annually. The exponential growth model assumes that growth occurs continuously at every instant. Both formulas use initial population, a growth rate, and time to project future size. While they yield similar results for low growth rates, the exponential model reflects a more continuous biological growth process.

66. (A) A proportion's numerator is a subset of its denominator, which is not necessarily true for a ratio.
A ratio is a broad mathematical term representing the relationship between any two quantities, where the numerator and denominator can be entirely independent. A proportion is a specific type of ratio where the numerator must be a part of the total represented by the denominator. Therefore, a proportion is always between zero and one (or zero and one hundred percent), whereas a ratio can be any non-negative value, including those greater than one.

67. (C) Cohort-component method
The Expert Committee of the Government of India primarily utilizes the cohort-component method for generating official national and sub-national population projections. This sophisticated approach involves projecting individual age and sex cohorts into the future based on specific assumptions regarding fertility, mortality, and migration. This method is preferred over simple mathematical extrapolation because it provides detailed structural information and explicitly accounts for the demographic drivers of change, which is essential for comprehensive national planning.

68. (D) a, b, and d
Population projection methods vary in their complexity and utility. Mathematical methods are simpler and require less data than the component method, which provides detailed insights into changing age structures. While logistic curves are useful for long-term modeling due to carrying capacity assumptions, sub-national projections are notably more complex because they must incorporate volatile internal migration flows. Understanding these differences is crucial for selecting the most appropriate method based on data availability and planning needs.

69. (C) The value that occurs with the highest frequency.
In a frequency distribution, the mode is defined as the specific value or category that appears most often in the dataset. It is a measure of central tendency that highlights the most common occurrence. Unlike the mean and median, a distribution can have more than one mode (bimodal or multimodal) or no mode at all if all values occur with equal frequency. The mode is particularly useful for analyzing categorical or nominal data.

70. (B) Population density
The component method of population projection focuses on the primary drivers of demographic change: fertility, mortality, and migration. By applying projected rates for these three components to an initial age-sex population, demographers can estimate the future size and structure of a population. Population density, while a useful demographic measure, is a result of population size and land area rather than a direct driver used in the calculations of the component projection method itself.

71. (A) Both A and R are true and R is the correct explanation of A.
A population pyramid serves as a visual record of a society's demographic history over several decades. Significant historical events such as wars, famines, or economic booms influence birth and death rates, creating bulges or indentations in specific age cohorts. These structural anomalies persist as the affected cohorts age, allowing demographers to "read" the past experiences of a population simply by examining the shape and symmetry of its age-sex distribution at a given time.

72. (A) 1000
Person-years of observation are calculated by multiplying the number of individuals by the duration for which each person is followed. In this study, one hundred people were followed for five years, contributing five hundred person-years. Additionally, fifty people were followed for ten years, also contributing five hundred person-years. Summing these two figures results in a total of one thousand person-years, providing a cumulative measure of the population's exposure to the risk of events during the study.

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73. (C) Geometric growth rate
The decadal growth rate, which measures the percentage change in population between two censuses typically held ten years apart, is a specific application of the geometric growth model. This model assumes that growth occurs at a constant rate compounded at discrete intervals, such as annually or over a decade. It accounts for the fact that the population added in each interval becomes part of the base for growth in the subsequent period, reflecting a compounding effect.

74. (A) It publishes only one projection variant based on the most likely scenario.
The United Nations' World Population Prospects is a comprehensive data source providing demographic estimates and projections for all countries. Contrary to the idea of a single projection, it actually publishes multiple variants—most notably the low, medium, and high scenarios. These variants are based on different assumptions about future fertility trends, allowing researchers and policymakers to consider a range of possible demographic futures rather than relying on a single deterministic outcome.

75. (D) Age-sex specific labour force participation rates.
Calculating workforce projections involves more than just knowing the future size of the population. It requires the application of age-sex specific labor force participation rates to the projected numbers of people in the working-age cohorts. These rates represent the proportion of individuals in each group who are either employed or actively seeking work. This step allows planners to estimate the future supply of labor, which is essential for economic forecasting and social policy development.

76. (B) To predict values beyond the range of the observed data.
Extrapolation is a statistical technique used to estimate or predict values that lie outside the range of a known set of data points. In demography and other fields, it involves extending an observed trend forward into the future or backward into the past. While useful for forecasting, extrapolation relies on the critical assumption that the historical patterns and underlying conditions will continue to remain stable during the period being projected.

77. (A) a, b, c, d
Population analysis encompasses several key concepts. Doubling time is inversely related to growth rate, meaning faster growth leads to a shorter doubling period. Population pyramids graphically display age-sex composition, while a Net Reproduction Rate below unity signifies fertility levels lower than what is needed for replacement. The component method explicitly uses births, deaths, and migration. However, the exponential growth model assumes a constant rate of continuous increase rather than a decelerating one.

78. (D) The number of males per 100 females.
In demography, a ratio is a measure that compares two distinct groups or quantities to one another. The sex ratio, expressed as the number of males per one hundred females, is a classic example because it relates two separate populations. In contrast, birth and death rates are rates that measure events over time, and the percentage of urban population is a proportion that compares a subgroup to the total population of which it is a part.

79. (A) Both Statement I and Statement II are true.
The polynomial growth curve method offers flexibility by using higher-degree mathematical equations to fit complex historical population trends that may not follow a simple linear or exponential path. However, a significant drawback is that these equations can become highly unstable when used for long-term extrapolation. Small variations in historical data can lead to unrealistic and exaggerated projections, such as negative population sizes or implausible growth spikes, if projected too far into the future.

80. (B) After the most recent census.
A post-censual population estimate refers to an estimation made for a date that occurs after the most recent official census has been completed. It uses the last census count as the starting point and adjusts for subsequent changes in births, deaths, and migration. These estimates are necessary for current planning until the next census is conducted. They differ from inter-

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censual estimates, which are calculated for dates falling between two already completed censuses.

81. (B) P-3, Q-4, R-1, S-2
Population growth models are distinguished by their fundamental assumptions. The arithmetic model assumes a constant absolute number of people are added each period. The geometric model assumes a constant growth rate compounded at discrete intervals. The exponential model assumes continuous compounding, while the logistic model incorporates an upper limit or carrying capacity. Matching these characteristics to the models is essential for selecting the appropriate mathematical tool for demographic analysis and population forecasting.

82. (A) Descriptive statistics summarizes data, while inductive statistics makes inferences from data.
Descriptive statistics focus on summarizing and organizing the features of a specific dataset through measures such as the mean, median, and various charts. In contrast, inductive statistics, also known as inferential statistics, use data collected from a sample to draw broader conclusions or make predictions about a larger population. While descriptive statistics describe what is in the data, inductive statistics aim to explain what the data means for the population as a whole.

83. (A) Both A and R are true and R is the correct explanation of A.
The standard error of the mean is a measure of the precision with which a sample mean estimates the true population mean. As the sample size increases, the standard error decreases because larger samples are generally more representative and provide a more stable estimate. This reduction in variability among sample means occurs because individual fluctuations have less impact on the overall average, leading to greater confidence that the sample result is close to the actual population parameter.

84. (D) The proportion of vaccinated people who develop the disease during the study period.
In public health and demography, incidence refers to the frequency of new cases of a disease occurring in a specific population at risk over a defined period. In a vaccine study, the incidence among the vaccinated group would be measured by tracking how many individuals, who were initially healthy after vaccination, develop the disease during the course of the investigation. This rate is critical for evaluating the protective efficacy of the vaccine against new infections.

85. (C) Arithmetic/Linear
The arithmetic or linear growth model is represented by the formula where the future population is the initial population plus a constant absolute increase multiplied by time. This model assumes that the population adds the same number of people each year, regardless of the population size. This results in a straight-line trend when population is plotted against time. While simple, it is generally only suitable for short-term projections where growth patterns are relatively stable.

86. (B) Lexis Diagram
The Lexis diagram is a specialized demographic tool designed to visually represent the timing and location of demographic events, such as births or deaths, in relation to age and calendar time. By plotting time on one axis and age on the other, it allows for the clear tracking of individual life paths and the progress of entire cohorts through time. This visualization is essential for distinguishing between period effects, age effects, and cohort effects in demographic analysis.

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87. (D) Number of teachers per school.
School enrollment projections using the grade-progression method focus on the movement of students through the educational system. Key inputs include the number of new entrants to the first grade, the population of school-entry age, and specific rates for promotion, repetition, and dropout. While the number of teachers is an important educational resource, it is a consequence of enrollment levels rather than a direct input used to calculate the projected number of students themselves.

88. (A) Mean > Median > Mode
In a positively skewed distribution, a few extremely high values pull the arithmetic mean toward the right tail of the data. The median, being the middle value, is less affected by these outliers and remains lower than the mean. The mode, representing the most frequent value, typically stays at the peak of the distribution

on the left side. Therefore, the characteristic relationship in a positively skewed dataset is that the mean is greater than both the median and the mode.

89. (C) a, b, and c
Standardized rates are essential for making fair demographic comparisons by removing the confounding effects of different age structures. This is particularly important when comparing mortality between populations with very different age profiles, such as a young versus an old population, or when tracking a single population over a long period as it ages. Contrary to simplifying the process, standardization actually requires more detailed age-specific data and additional calculation steps compared to using simple crude rates.

90. (A) Zero population growth.
Population stabilization is a demographic state where the total size of a population remains constant over time, meaning the growth rate is zero. This occurs when the number of annual births and immigrants perfectly balances the number of annual deaths and emigrants. Achieving this state often involves reaching replacement-level fertility over a sustained period. It is a key milestone in the demographic transition process for many countries seeking to manage long-term resource sustainability.

91. (D) They are often linked to economic forecasting and development indicators.
The World Bank produces population projections that are specifically designed to be integrated with economic analysis and development planning. These projections often take into account factors like labor force growth and dependency ratios, which are critical for forecasting economic trends. Unlike purely demographic models, the World Bank's approach emphasizes the intersection between population dynamics and economic indicators, providing a comprehensive framework for assessing future development challenges and opportunities at both national and global levels.

92. (B) 2, 4, 1, 3
Calculating measures of dispersion follows a strict logical sequence. First, the arithmetic mean must be determined. Then, the difference between each data point and the mean is calculated and squared, and these values are summed. This sum of squared differences is then used to find the variance, which is the average of these squares. Finally, the standard deviation is obtained by taking the square root of the variance. This stepwise process ensures a mathematically sound measure of data variability.

93. (C) $r = [(P2 / P1)^{(1/n)}] - 1$
The annual geometric growth rate represents the constant rate at which a population grows each year, assuming the growth is compounded at discrete intervals. The formula involves taking the n-th root of the ratio of the final population to the initial population and then subtracting one. This calculation provides the average yearly percentage increase over the specified number of years. It is a standard demographic formula for analyzing population change between two distinct census points.

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94. (D) The proportion of the population having the disease at a specific point in time.
Prevalence is an epidemiological and demographic measure that quantifies the total burden of a disease within a community. It is expressed as the proportion of individuals who have the specific condition at a particular moment, including both newly diagnosed and pre-existing cases. This measure is especially useful for assessing chronic diseases, as it reflects the overall need for medical care and social support services within the population at any given time.

95. (B) Both Statement I and Statement II are false.
Correlation measures the strength and direction of a linear relationship between two variables, but it does not prove that one variable causes the other. Similarly, linear regression models the relationship and allows for predictions, but it cannot definitively establish causality on its own. Causal relationships require experimental evidence or rigorous theoretical frameworks. A high correlation might be due to a third, unobserved variable that influences both, leading to a spurious association between the two being studied.

96. (B) Component method
The component method is the most appropriate and demographically sound technique for

population projection when detailed data on births, deaths, and migration are available. By applying age-specific rates for these three components to a base population, this method provides a detailed forecast of the future size and age-sex structure. This approach is superior to simple mathematical methods because it explicitly models the drivers of change, allowing for more accurate and nuanced long-term planning.

97. (B) Between two past census dates.
An inter-censual population estimate refers to an estimation made for a specific date that falls between two previously completed censuses. Because it is anchored by two known population counts, it is generally more accurate than a post-censual estimate. Demographers can use the second census results to adjust the initial estimate and account for the error of closure, ensuring that the estimated population trend aligns perfectly with the actual data recorded at both census points.

98. (A) Both A and R are true and R is the correct explanation of A.
The Gompertz curve is a popular mathematical model for population projection because its asymmetrical S-shape often fits real-world growth patterns better than the symmetric logistic curve. It reflects a process where growth initially starts slowly, accelerates, and then approaches a carrying capacity more gradually. This asymmetry allows it to better represent populations where the factors slowing down growth become more dominant at different stages of development compared to those that drove the initial acceleration.

99. (C) The population of all ages at a single point in time.
In a Lexis diagram, time is plotted on the horizontal axis and age on the vertical axis. A vertical line intersecting the time axis at a specific year represents a "snapshot" of the entire population across all age groups at that particular moment in time. This visualization is useful for analyzing the age structure of a population during a specific calendar period and for identifying how events occurring at that time affected individuals of different ages.

100. (C) P-2, Q-4, R-1, S-3
Demographic and epidemiological measures are applied in various contexts. An incidence rate measures new cases, such as flu occurrences in a specific year. Prevalence identifies the total burden of a condition at a single point in time, like the percentage of people with diabetes. Population density quantifies the number of individuals per unit area. The sex ratio is a measure comparing two groups, such as the number of males relative to every one hundred females.

101. (C) Dividing 70 by the annual growth rate (in percent).
The 'Rule of 70' is a simplified mathematical formula used to estimate the number of years it will take for a population to double in size, given a constant annual growth rate. By dividing the number seventy by the growth rate expressed as a percentage, demographers can quickly obtain a close approximation of the doubling time. This rule is derived from the properties of natural logarithms and serves as a practical tool for assessing the speed of population growth.

102. (B) It fits a curve to a series of past population observations.
The polynomial growth curve method involves using a mathematical equation with multiple terms to fit a line to historical population totals. This method can accommodate complex trends and changes in growth rates over time by adjusting the degree of the polynomial. Unlike component methods, it does not explicitly model fertility, mortality, or migration, but rather treats population change as a single trend to be extrapolated into the future based on past data patterns.

103. (B) a, b, c
Conducting a sub-national population projection using the component method requires specific regional data. This includes a base population categorized by age and sex for each sub-national area, along with regional assumptions for future fertility and mortality trends. Crucially, it must also incorporate assumptions regarding inter-regional migration flows, which significantly impact local population dynamics. Factors like national population density or historical climate data are not direct mathematical inputs required for this specific demographic projection method.

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104. (A) Rate of natural increase.
The rate of natural increase is a fundamental demographic measure calculated by subtracting the crude death rate from the crude birth rate. It represents the portion of population growth that is due exclusively to the balance of births and deaths, excluding the effects of migration. This rate provides a clear indication of how a population is changing internally and is typically expressed as a rate per one thousand people or as a percentage per year.

105. (C) A highly skewed distribution of annual incomes.
The median is often a more appropriate measure of central tendency than the mean for highly skewed distributions, such as annual incomes. In these cases, a few extremely high values can significantly pull the mean upward, making it unrepresentative of the typical person's income. The median, as the middle value, is not affected by these outliers and provides a more accurate reflection of the center of the data distribution for skewed datasets.

106. (A) Geometric assumes growth at discrete intervals, while exponential assumes continuous growth.
Geometric and exponential growth models differ primarily in their assumptions about when compounding occurs. The geometric model assumes that population increases at a constant rate at fixed intervals, such as annually, which is often suitable for data collected through yearly censuses or registrations. The exponential model assumes that growth happens continuously at every instant. While both result in rapid, J-shaped growth, the continuous nature of the exponential model more closely simulates many biological and demographic processes.

107. (D) Median
Statistical analysis utilizes measures of dispersion to quantify the spread or variability within a dataset. Common examples include the range, variance, and standard deviation, which all describe how spread out the data points are. The median, however, is a measure of central tendency, identifying the middle value that divides an ordered dataset into two equal halves. It provides information about the center of the data rather than its spread or variability.

108. (A) Both Statement I and Statement II are true.
Population estimates are categorized based on their relationship to census dates. A post-censual estimate for 2015 is made using 2011 data as a base; however, once 2021 census data is released, it can be recalculated as an inter-censual estimate. This transition allows for adjustments based on the "error of closure," which is the difference between the projected and actual population counts, ensuring that the estimated trend correctly aligns with both confirmed census points.

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109. (C) Correlation and linear regression.
To investigate the relationship between two continuous variables, such as years of education and annual income, researchers typically begin with correlation and linear regression. Correlation measures the strength and direction of the linear association between the variables. Linear regression takes this further by creating a mathematical model that describes how income changes as education increases, allowing for the prediction of income based on educational attainment. These methods are fundamental for analyzing associations in data.

110. (D) Sex Ratio
Demographic rates, such as the crude birth rate, infant mortality rate, and age-specific fertility rate, measure the frequency of events within a population over a specific period of time. The sex ratio, however, is a ratio that compares two different subgroups—males and females—at a single point in time. It does not measure the occurrence of an event over time but rather the balance between two distinct demographic groups within the total population.

111. (A) Applying the study population's age-specific death rates to the age structure of a selected standard population.
Direct standardization is a technique used to compare mortality or other rates between populations by removing the effect of different age structures. The process involves taking the actual age-specific death rates from the study population and applying them to the age distribution of a common standard population. This calculates the overall rate that would occur if the study population had that standard age

structure, allowing for a fair comparison with other standardized populations.

112. (C) A is true but R is false.
The component method is widely considered the most sophisticated and demographically sound technique for population projection because it explicitly accounts for fertility, mortality, and migration. However, the reason provided is incorrect; the component method is actually data-intensive. It requires detailed age-sex specific data for the base population and assumptions for each demographic driver, rather than just the total population figures from the last two censuses, which would only suffice for simple mathematical models.

113. (B) A declining population with very low fertility and low mortality.
A population pyramid with a narrow base and a wide top indicates that birth rates are very low, with few young people entering the population. The wide top reflects low mortality rates and high life expectancy among the elderly. This "coffin" or "constrictive" shape is characteristic of populations that are shrinking in size and aging rapidly, a situation often found in advanced industrial societies that have completed their demographic transition.

114. (A) 1, 3, 2, 5, 4
Hypothesis testing follows a rigorous logical sequence. It begins with formulating the null and alternative hypotheses and choosing a significance level. Next, sample data is collected and used to compute a test statistic. Finally, a decision is made to either reject or fail to reject the null hypothesis based on the evidence. This structured approach ensures that statistical conclusions are based on predefined criteria and the systematic analysis of data.

115. (C) A measure of dispersion.
The standard deviation is a fundamental measure of dispersion that quantifies the amount of variation or spread in a dataset. It indicates how much individual data points typically differ from the arithmetic mean. A low standard deviation suggests that data points are close to the mean, while a high value indicates greater variability. This statistic is essential for understanding the consistency and reliability of data in both descriptive and inferential statistics.

116. (B) P-3, Q-2, R-1, S-4
Different types of projections are linked to specific demographic methods and rates. Workforce projections utilize age-sex specific labor force participation rates. Household projections rely on headship rates to estimate the number of family units. National population projections are most accurately produced using the cohort-component method, which accounts for births, deaths, and migration. School enrollment projections often use grade progression ratios to track student movement through different levels of the educational system.

117. (C) The number of people relative to a given land area.
Population density is a demographic measure that quantifies the concentration of people within a specific geographic region. It is calculated by dividing the total population of an area by its land surface area, typically expressed as people per square kilometer or square mile. This metric is used to compare the degree of crowding and resource pressure across different regions, providing essential information for urban planning, environmental assessment, and the allocation of services.

118. (D) a, b, c, and d
Population growth models differ in their mathematical assumptions about compounding. The arithmetic rate assumes a constant absolute increase. The geometric rate assumes annual compounding at a constant percentage. The exponential rate assumes continuous compounding. Mathematically, for a growing population, the continuous nature of exponential growth leads to a slightly higher projected rate than geometric growth, which in turn is higher than arithmetic growth. Understanding these relationships is fundamental for accurate demographic modeling and forecasting.

119. (D) The rate of change is constant between or beyond the known points.
Linear interpolation and extrapolation are based on the core assumption that the rate of change between established data points, or beyond them, remains perfectly constant. This means

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the population is assumed to grow or decline by a fixed amount over each time unit, resulting in a straight-line trend. While these methods are simple and useful for short-term estimates, they do not account for fluctuations in fertility, mortality, or migration that often occur in reality.

120. (A) The numerator is included in the denominator.
In demography and statistics, a proportion is a specific type of ratio where the numerator represents a subgroup that is entirely contained within the larger group represented by the denominator. Because of this relationship, a proportion must always have a value between zero and one. For example, the proportion of women in a population is calculated by dividing the number of women by the total population, ensuring the numerator is a part of the whole.

121. (C) Enable comparison by removing the confounding effect of a third variable (e.g., age).
The primary purpose of standardizing a demographic rate is to allow for accurate comparisons between populations that have different internal structures, most commonly age distributions. Crude rates can be misleading because they are influenced by these structural differences. Standardization removes the confounding effect by applying local rates to a common standard population structure. This ensures that any observed differences in the standardized rates reflect actual differences in the underlying demographic risk being studied.

122. (A) Both Statement I and Statement II are true.
Descriptive statistics are categorized into measures of central tendency and measures of dispersion. The mean, median, and mode are all tools used to identify the central or typical value of a dataset. Conversely, the range, variance, and standard deviation are measures of dispersion that quantify the degree of spread or variability among individual data points. Both sets of measures are essential for providing a complete summary of the characteristics of any given data distribution.

123. (D) Sigmoid (S-shaped)
The Gompertz and logistic growth curves are both examples of sigmoid, or S-shaped, functions used in population modeling. They describe a process where growth is initially slow, then accelerates during a middle phase, and finally slows down again as it approaches an upper limit or carrying capacity. While they differ in their symmetry, both curves represent the common biological and demographic phenomenon of growth occurring within an environment with finite resources and constraints.

124. (B) No linear relationship between the variables.
A correlation coefficient of zero indicates that there is no linear association between the two variables being studied. This means that changes in one variable do not consistently correspond to predictable linear changes in the other. It is important to note that a zero correlation only rules out a linear relationship; the variables could still be related in a non-linear way. Furthermore, correlation does not provide any information regarding causal links between the variables.

125. (A) Both A and R are true and R is the correct explanation of A.
Creating accurate population projections at the sub-national level is significantly more challenging than at the national level. The primary reason is the influence of internal migration, which can cause rapid and unpredictable changes in local population size and structure. Unlike national projections, where international migration is often more stable, sub-national models must account for people moving between regions. This component is difficult to measure accurately and is highly sensitive to local economic and social factors.

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126. (D) 17 per 1,000
The rate of natural increase is a measure of internal population growth calculated by subtracting the crude death rate from the crude birth rate. In this scenario, with twenty-five births per one thousand and eight deaths per one thousand, the difference is seventeen. This means the population is naturally increasing by seventeen individuals for every one thousand people each year. This metric excludes the impact of migration and provides a clear view of basic demographic dynamics.

127. (C) a, b, c
Demographic analysis uses specific terms to describe population characteristics. A rate measures the occurrence of events over time

188. (B) a, b, c, e
The logistic growth curve is a mathematical model for population projection that produces a characteristic S-shaped path. A fundamental feature is that it requires an externally specified upper limit, known as the carrying capacity, reflecting growth in a constrained environment. While useful for modeling total population trends, it is a purely mathematical method that does not explicitly account for individual demographic drivers like fertility and mortality rates. It is preferred for long-term scenarios where environmental constraints are a major consideration.

189. (A) Both A and R are true and R is the correct explanation of A.
The median is often superior to the mean for describing the central location of skewed data because it is not influenced by extreme outliers. In datasets like household income, where a small number of people earn significantly more than the rest, these high values pull the arithmetic mean upward, making it unrepresentative of the typical experience. The median, being the middle point of an ordered set, remains stable despite these extremes, providing a more accurate reflection of the distribution's center.

190. (D) Age-sex specific labour force participation rates.
Projecting the future size of the labor force requires a two-step process. First, a detailed population projection by age and sex must be produced. Then, age-sex specific labor force participation rates are applied to these projected cohorts. These rates represent the proportion of individuals in each demographic group who are either working or looking for work. This step is essential for economic planning, as it estimates the future supply of labor that will be available to the national economy.

191. (A) 35 years
Doubling time is the number of years required for a population to double its size at a constant rate of growth. A quick way to estimate this is by using the 'Rule of 70', which involves dividing seventy by the annual growth rate expressed as a percentage. For a population growing at a two percent annual rate, dividing seventy by two results in a doubling time of approximately thirty-five years. This calculation provides a practical indicator of the speed of population growth.

192. (B) The life-line of an individual or a cohort.
A Lexis diagram is a specialized demographic graph that uses calendar time on the horizontal axis and age on the vertical axis. The fundamental unit being tracked is the "life-line" of an individual or a group born at the same time, known as a cohort. This life-line appears as a diagonal line with a slope of one, representing the simultaneous progression of time and age. This visualization allows demographers to precisely locate demographic events within the life history of a population.

193. (A) Both Statement I and Statement II are true.
Population growth can be modeled using different assumptions about the frequency of compounding. The geometric growth model assumes that the population increases at a constant rate that is added at discrete, regular intervals, such as every year. This is often used for data from annual registers. The exponential growth model, on the other hand, assumes continuous compounding, where the population increases at every single moment. Both models reflect rapid growth, but the exponential model more closely simulates biological processes in many environments.

194. (A) Variability or dispersion
The range, variance, and standard deviation are collectively known as measures of dispersion or variability. They provide mathematical descriptions of how much individual data points in a distribution differ from each other or from the central mean. While central tendency measures identify the typical value, measures of dispersion describe the extent of spread. These indicators are crucial for understanding the consistency of a dataset and for assessing the risk and uncertainty associated with statistical predictions and population estimates.

195. (C) They assume that past trends will continue indefinitely into the future.
Mathematical extrapolation methods, such as linear or geometric models, are useful for short-term population estimates but have a major limitation for long-term projections. These methods are based on the core assumption that

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precision with which a sample statistic estimates a population parameter.

135. (D) A table or graph that displays how often different values or categories occur in a dataset.
A frequency distribution is a fundamental statistical tool used to organize and summarize raw data. It systematically displays the number of times each unique value or category appears within a dataset, often presented as a table or a histogram. By visualizing the frequency of various data points, researchers can quickly identify patterns, the central location of the data, and the extent of variability, providing a clear overview of the dataset's overall distribution and characteristics.

136. (A) 2%
The 'Rule of 70' is a practical demographic tool for estimating the relationship between a constant annual growth rate and the time it takes for a population to double. By dividing seventy by the number of years required for doubling, you can find the growth rate as a percentage. In this case, dividing seventy by thirty-five results in an approximate annual growth rate of two percent. This rule provides a quick and reliable estimate for analyzing population dynamics.

137. (C) It is a type of mathematical curve-fitting method.
The component method, or cohort-component method, is a demographic projection technique that explicitly models future population by accounting for births, deaths, and migration. It requires detailed age-sex data and separate assumptions for each demographic driver. It is not a mathematical curve-fitting method like the logistic or polynomial models, which treat population change as a single trend to be represented by an equation. Instead, the component method simulates the internal biological and social processes of change.

138. (B) P-3, Q-1, R-4, S-2
A Lexis diagram utilizes a coordinate system to represent demographic history. The horizontal axis tracks calendar time, while the vertical axis represents age. A diagonal line with a unit slope represents a cohort aging through time as they move forward in both years and age. A vertical line at a specific point on the time axis represents the population snapshot across all ages at that single moment. Understanding these axes and lines is essential for demographic visualization.

139. (D) The generation of daughters will be 20% smaller than the generation of mothers.
The Net Reproduction Rate measures the average number of daughters a newborn girl is expected to have, surviving to childbearing age. An NRR of 0.8 signifies that the current generation of mothers will be replaced by a generation of daughters that is only eighty percent as large. This indicates a twenty percent decline in the size of the female population over one generation, assuming current fertility and mortality rates remain constant, representing fertility below the replacement level.

140. (B) Lexis
Mathematical growth curves, such as the Gompertz, logistic, and polynomial models, use equations to simulate total population trends over time based on historical data. These are standard tools for population projection. Lexis, however, refers to the Lexis diagram, which is a graphical tool used to visualize the relationships between age, time, and demographic events like births and deaths. It is not a mathematical growth curve itself but rather a framework for demographic analysis and visualization.

141. (A) Both A and R are true and R is the correct explanation of A.
The crude death rate is a simple average of deaths across the whole population and is heavily influenced by the age structure. Because death rates are much lower for younger people, a population with a very high proportion of youth can have a lower overall crude death rate than an older population, even if mortality risk is higher at every specific age. Standardization is necessary to remove this structural effect and allow for fair health comparisons between populations.

142. (D) A numerical summary of the entire population.
In statistics, a parameter is a fixed numerical value that describes a specific characteristic of an entire population, such as its mean age or total literacy rate. Because it is often impractical to collect data from every individual, researchers use samples to calculate statistics that serve as

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estimates of these population parameters. A parameter represents the "true" value for the whole group, while a sample statistic is the value observed within a selected subset.

143. (A) It proves a causal link when the correlation coefficient is near 1 or -1.
Linear regression is a powerful statistical tool for modeling the relationship between variables and making predictions based on a line of best fit that minimizes squared errors. However, even a very high correlation coefficient does not prove a causal link. Association between two variables could be caused by an underlying third factor. Establishing causality requires additional experimental design or rigorous theoretical justification beyond what simple regression and correlation analysis can provide on their own.

144. (A) a, b, c
Population projections are produced by various major bodies using different approaches. The United Nations offers high, medium, and low variants to account for fertility uncertainty. The World Bank's projections are often tailored for economic and development analysis. India's official projections are generated by an Expert Committee using the cohort-component method. Note that mathematical methods like the logistic curve are actually less data-intensive than component methods, and sub-national projections are more complex due to migration components.

145. (B) General Fertility Rate
The General Fertility Rate is a demographic measure of fertility that is more refined than the crude birth rate. It is calculated by dividing the total number of live births in a year by the number of women of childbearing age, typically defined as those between fifteen and forty-nine years old. By focusing only on the population at risk of giving birth, it provides a more accurate representation of fertility intensity than measures that use the total population.

146. (A) A stationary or slow-growing population with low fertility and low mortality.
A population pyramid that is nearly rectangular in shape reflects a society where birth rates are low and balanced by low death rates across most age groups. The consistent width through the younger and middle ages indicates that roughly the same number of people are entering the population as those present in older cohorts. This structure is characteristic of advanced industrial nations that have achieved demographic stability with very slow growth or zero population growth.

147. (C) To make a decision about a population parameter based on sample evidence.
Hypothesis testing is a fundamental procedure in inferential statistics used to draw conclusions about an entire population based on data collected from a sample. It involves evaluating two opposing statements—the null and alternative hypotheses—to determine which is better supported by the evidence. This process provides a mathematical framework for making decisions about population parameters and for determining if observed sample results are statistically significant or likely due to random chance.

148. (A) Both Statement I and Statement II are true.
Interpolation and extrapolation are essential mathematical techniques for estimating unknown values in a series. Interpolation involves calculating a value that lies between two known data points, such as estimating population for a year between censuses. Extrapolation involves extending observed trends to predict values outside the range of existing data, such as forecasting future population size. Both methods assume that the underlying pattern of change remains consistent, whether within or beyond the known data range.

149. (C) Logistic model
The concept of carrying capacity is central to the logistic model of population growth. It represents the maximum population size that a specific environment can sustain indefinitely given the available resources. Unlike the exponential model, which assumes unlimited growth, the logistic model acknowledges that as a population approaches its carrying capacity, growth will slow down and eventually stabilize. This creates the characteristic S-shaped curve when population size is plotted against time in demographic studies.

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150. (B) Median
The median is a measure of central tendency defined as the middle value in a dataset that has been arranged in order of magnitude. It effectively divides the data into two equal halves, with fifty percent of the observations falling below it and fifty percent above it. This makes the median a robust indicator of the center, as it is not influenced by extreme outliers at either end of the distribution, unlike the arithmetic mean.

151. (D) There are 940 females for every 1000 males.
A ratio is a mathematical relationship between two independent quantities, often expressed by comparing one group to another. The sex ratio, such as ninety hundred and forty females per every one thousand males, is a classic demographic example. This differs from proportions and percentages, where the numerator is a subset of the total population, and from rates, which measure the occurrence of events over a specific period of time relative to the population at risk.

152. (A) It projects the population by calculating future births, subtracting future deaths, and adding net migration.
The component method, or cohort-component method, is a demographic approach to population projection that explicitly simulates the drivers of population change. It functions by taking a base population and applying specific future assumptions for births, deaths, and migration for each age and sex group. This detailed approach provides not only the future total population size but also insights into the future age structure, making it a vital tool for comprehensive national and regional planning.

153. (A) 1, 2, 3, 4
Demographic terms can be organized from general concepts to specific indicators. 'Rate' is the broadest category, defining the occurrence of events over time. The 'Crude Death Rate' is a general rate applying to the whole population. An 'Age-Specific Death Rate' narrows the focus to a particular age group. Finally, the 'Infant Mortality Rate' is highly specific, measuring deaths within a very restricted age range and specific population at risk, namely those under one year old.

154. (A) Using sample data to make inferences or predictions about a larger population.
Inductive statistics, also known as inferential statistics, involves the process of drawing conclusions about an entire population based on observations from a representative sample. This branch of statistics uses mathematical techniques such as hypothesis testing and confidence intervals to determine how likely it is that sample findings accurately reflect the true characteristics of the whole group. It is essential when collecting data from every individual in a population is impractical or impossible.

155. (A) Both A and R are true and R is the correct explanation of A.
The logistic growth curve is often preferred for long-term population projections because it acknowledges the biological reality of limited resources. It incorporates a carrying capacity, which is an upper limit to the population size an environment can support. As the population grows, the model assumes that factors such as food supply or living space will eventually slow the growth rate as the limit is approached, creating a more realistic S-shaped trend compared to unlimited exponential growth.

156. (B) Variance
In statistics, the variance is a measure of dispersion that represents the average of the squared deviations of each data point from the arithmetic mean. It provides a mathematical way to quantify how spread out the data is. The standard deviation is simply the positive square root of the variance. While the standard deviation is more intuitive because it uses the same units as the original data, the variance is a fundamental property used in many complex statistical calculations.

157. (C) Household projection
Household projections estimate the future number and characteristics of family or residential units. A key input for this process is the age-sex specific headship rate, which is the proportion of individuals in each demographic group who are identified as the head of a household. By applying these rates to a general population projection, demographers can calculate the total number of households, which is essential for planning

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relative to a population at risk. A ratio compares two independent groups, such as males to females. A proportion compares a subgroup to the entire group. However, a percentage is a proportion multiplied by one hundred, not one thousand. Furthermore, population density is a measure of concentration per unit area, not a measure of statistical dispersion.

128. (B) The population projected to a census date and the actual census count.
In demography, the error of closure is the discrepancy observed between the population size estimated or projected for a specific census date and the actual count obtained during the census. This error can result from inaccuracies in the initial census base, under-reporting of vital events, or errors in measuring migration. Calculating this difference is essential for demographers to adjust inter-censual estimates and improve the accuracy of future population projection models and estimation techniques.

129. (B) Less affected by extreme values or outliers.
The median is a robust measure of central tendency because it is determined by the middle position in an ordered dataset rather than the values of all individual data points. Unlike the arithmetic mean, which can be significantly shifted by a few very high or very low outliers, the median remains stable. This makes it a preferred measure for describing the center of skewed distributions, such as household income, where extreme values are common and unrepresentative.

130. (A) Age-specific population projection using the component method.
To accurately estimate the future number of elderly individuals requiring care, demographers must use the component method of population projection. This approach provides detailed information on the future age and sex structure of the population by explicitly accounting for fertility, mortality, and migration. By projecting the size of specific older age cohorts into the future, planners can make informed decisions about the long-term needs for specialized healthcare services, social support, and geriatric facilities.

131. (C) The natural logarithm.
In the formula for the exponential growth rate, 'ln' represents the natural logarithm, which is the logarithm to the base 'e'. The constant 'e' is approximately equal to 2.718 and is fundamental in mathematics for modeling processes that grow continuously. The use of natural logarithms allows demographers to calculate a constant rate of continuous growth based on the ratio of population sizes at two different points in time, facilitating comparisons of growth intensity.

132. (A) 2, 3, 1, 4
Population projection methods vary significantly in their data requirements. Simple linear extrapolation is the least intensive, requiring only total population counts. The logistic curve method is slightly more complex, involving the estimation of a carrying capacity. The national component method is more intensive, requiring detailed age-sex specific data for births, deaths, and migration. The sub-national component method is the most data-intensive, as it requires these components for every individual region plus internal migration data.

133. (C) The Population Division of the United Nations
The Population Division of the United Nations is the internationally recognized authority for producing the World Population Prospects. This publication provides comprehensive demographic estimates and projections for every country in the world. It includes multiple projection variants that account for different potential future trends in fertility, mortality, and international migration. These data are widely used by researchers, governments, and international agencies for global and regional planning and social policy analysis.

134. (B) Both Statement I and Statement II are false.
Statistical terms like standard error and standard deviation are often confused but have distinct meanings. The standard deviation is a measure of the dispersion of individual data points within a single distribution. The standard error, however, is a measure of the variability of a sample statistic, such as the mean, across different possible samples. It represents the standard deviation of the sampling distribution and indicates the

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throughout a study period. By using person-years as the denominator, researchers can calculate highly accurate rates that reflect the true intensity of exposure and occurrence for various demographic and health phenomena.

166. (B) Sample statistic
When a value is calculated from data collected from a sample rather than the entire population, it is known as a sample statistic. For example, the average income derived from a survey of one thousand households is a statistic used to estimate the actual average income of the entire population, which would be a parameter. Sample statistics vary depending on the specific individuals selected for study and are fundamental in inferential statistics for making population-level conclusions.

167. (D) Incidence measures risk, while prevalence measures burden of disease.
Incidence and prevalence provide different perspectives on health within a population. Incidence is a rate that tracks new cases occurring over time, serving as a measure of the risk or speed of disease development. Prevalence is a proportion that counts all cases—both new and existing—at a specific point in time, indicating the total burden of the disease on the community. Understanding both is essential for effective public health monitoring and for the allocation of medical resources.

168. (A) The volatility and difficulty in measuring internal migration.
One of the most significant challenges in sub-national population projection is accurately accounting for internal migration. While births and deaths are relatively well-tracked at the local level, people moving between regions can cause sudden and large changes in local population size and structure. Migration is often highly sensitive to local economic opportunities and social factors, making it volatile and much harder to predict or measure precisely than the demographic components used for national-level projections.

169. (C) 5
In statistics, the mode is defined as the value that appears most frequently in a dataset. For the provided set of numbers, the value five occurs three times, which is more often than any other number. Both the value four and the value five appear, but five has the highest frequency. Identifying the mode is useful for understanding the most common or typical occurrence in a distribution, particularly for categorical data or simple numeric lists.

170. (A) Both A and R are true and R is the correct explanation of A.
The standard deviation is a non-negative measure of statistical dispersion. This is because its calculation begins by taking the difference between each data point and the mean and squaring those differences. Squaring ensures that even negative deviations become positive. The average of these squared values, known as the variance, is therefore also non-negative. Since the standard deviation is the positive square root of the variance, it must always be zero or a positive numerical value.

171. (D) Exponential model
Mathematical population growth models describe different trajectories of change. The logistic and Gompertz models both produce S-shaped, or sigmoid, curves that represent growth accelerating and then slowing down as it approaches an upper limit. The exponential model, however, assumes a constant rate of relative growth without any upper constraints. This results in a J-shaped curve when population size is plotted against time, representing growth that occurs at every instant without ever leveling off.

172. (A) a, b, c, d, e
Population estimation and projection utilize several interrelated methods. Inter-censual estimates are for years between censuses, while post-censual ones follow the latest census. Inter-censual estimates are generally more accurate as they are bounded by two data points. The balancing equation—incorporating births, deaths, and migration—is a fundamental tool in these processes. Collectively, these methods provide essential alternatives to conducting full censuses, allowing for continuous population monitoring for planning and policy purposes between decennial counts.

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urban development, housing supply, and social services.

158. (A) P-3, Q-1, R-4, S-2
Statistical analysis relies on distinguishing between population and sample characteristics. A parameter is a true value describing an entire population, while a statistic is calculated from a specific sample. The sampling distribution is a theoretical probability distribution of a statistic derived from all possible samples of the same size. Finally, the standard error represents the standard deviation of that sampling distribution, providing a measure of the precision with which the sample statistic estimates the true population parameter.

159. (A) Variance
Measures of central tendency, which include the arithmetic mean, median, and mode, are used to identify a single representative value that describes the center or "typical" value of a data distribution. Variance, however, is a measure of dispersion. It quantifies the degree of spread or variability in the data by calculating the average of the squared differences from the mean. Therefore, variance describes how much data points deviate from the center rather than identifying the center itself.

160. (A) d only
Population pyramids are visual tools representing age-sex structures. A wide base indicates high fertility, while rapid tapering at the top reflects higher mortality or lower life expectancy. Mid-structure bulges suggest a potential demographic dividend, and indentations often correspond to historical shocks like wars. However, a perfectly rectangular shape indicates a stationary or stable population with zero growth and low fertility and mortality, not a very rapidly growing population, which would instead have a broad base.

161. (B) Refer to a specific period of time.
A demographic rate is fundamentally defined by the inclusion of time in its calculation. It measures the frequency of an event, such as births or deaths, occurring within a specified period relative to the population exposed to the risk of that event. While proportions compare a part to a whole and ratios compare two groups, rates provide a measure of the intensity of demographic processes over a duration, such as a calendar year or a decade.

162. (A) Being predicted or explained.
In regression analysis, the dependent variable, often denoted as Y, is the primary outcome that the researcher is attempting to predict or explain. Its value is assumed to depend on the changes in one or more independent variables. The goal of the analysis is to determine the extent to which variations in the independent variables account for changes in the dependent variable, allowing for the creation of a predictive model for the outcome of interest.

163. (C) Statement I is true, but Statement II is false.
The United Nations' medium-variant population projections are built on the core assumption that fertility levels in all countries will eventually converge toward a replacement level. In contrast, the World Bank's population projections are not independent; they are often deeply integrated with the institution's economic forecasts and development indicators. These projections provide the demographic framework for analyzing future workforce supply, economic growth potential, and social needs, which are essential components of the Bank's broader development goals.

164. (D) The population adds a constant number of people each year.
The arithmetic growth model is a linear approach to population projection that assumes a population increases by a fixed absolute number of individuals during each time period. This constant amount is typically derived from the average annual increase observed between past censuses. Because it does not account for the compounding effect of growth where a larger population can produce more births, this method is generally most appropriate for short-term estimates in stable populations.

165. (C) Measuring the population exposure to risk over a period of time.
Person-years represent a cumulative measure of the total time that individuals in a population are under observation and at risk of experiencing a specific demographic event. This concept allows demographers to account for people who join or leave the population at different times

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major disadvantage is that it is not simple to apply and has significant data requirements. It necessitates comprehensive information on the base population and projected rates for each demographic component, making it much more complex than simple mathematical extrapolation models that only require total population figures.

181. (C) Technical Group/Expert Committee on Population Projections constituted by the Government of India.
Official population projections in India are the responsibility of a specialized Technical Group or Expert Committee appointed by the national government. This committee utilizes data from the latest census along with detailed assumptions regarding future trends in vital events and migration to produce authoritative projections. These figures are critical for long-term national and state-level planning, resource allocation, and social policy development, ensuring that government schemes are based on accurate estimates of future population size and structure.

182. (B) The Logistic curve is symmetric, while the Gompertz curve is asymmetric.
Both the logistic and Gompertz models produce S-shaped curves representing population growth that eventually slows as it approaches an upper limit. The key difference lies in their symmetry; the logistic curve is perfectly symmetric, with the point of inflection occurring at exactly half of the carrying capacity. The Gompertz curve, however, is asymmetric, allowing for growth to accelerate and decelerate at different rates. This asymmetry often makes the Gompertz curve a more flexible tool for fitting varied real-world demographic data.

183. (A) 2, 4, 1, 3
Statistical analysis follow a logical order. First, a researcher formulates a hypothesis about the relationship between two variables. Next, a scatter diagram is plotted to visually explore the potential association. A correlation coefficient is then calculated to quantify the strength and direction of any linear relationship discovered. Finally, if a significant association exists, a linear regression model is fitted to create a mathematical equation that can be used for predicting one variable based on the other.

184. (A) The likely sampling error in the sample mean as an estimate of the population mean.
The standard error of a sample mean provides a measure of how much the observed sample average is likely to differ from the actual, unknown population average. It quantifies the sampling error, which arises because a sample only represents a portion of the entire population. A smaller standard error indicates that the sample mean is a more precise and reliable estimate. This statistic is fundamental for constructing confidence intervals and for determining the statistical significance of sample findings.

185. (C) High birth rate and high death rate.
A population pyramid with a very broad base that tapers rapidly toward the top is characteristic of a society in the early stages of demographic transition. The wide base reflects a high birth rate, with many children being born into each new cohort. The rapid narrowing, however, indicates high mortality rates across all age groups, leading to low survival into older ages. This shape represents a young population with a high growth potential but also high vulnerability.

186. (A) P-3, Q-2, R-1, S-4
Statistical terms each have a specific interpretation in data analysis. The mean identifies the central tendency or average value. The standard deviation measures the dispersion or spread of data points around that mean. The correlation coefficient quantifies the strength and direction of the linear relationship between two variables. Finally, the regression slope represents the rate of change, indicating how much the dependent variable is expected to increase or decrease for every one-unit change in the independent variable.

187. (D) Inferential (or Inductive) statistics
Inferential statistics, also known as inductive statistics, refers to the branch of statistical analysis that allows researchers to draw conclusions or make predictions about a large population based on data collected from a representative sample. By using mathematical techniques such as hypothesis testing and confidence intervals, researchers can infer population parameters and evaluate the likelihood that their findings are not due to random chance. This process is essential for making informed decisions across various scientific and social fields.

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173. (C) Show the relationship between age, period, and cohort.
A Lexis diagram is a specialized demographic visualization tool that uses a two-dimensional grid to represent the intersections of time, age, and individual experience. It allows demographers to distinguish between period effects, which affect everyone at a specific time; age effects, which relate to life stages; and cohort effects, which are unique to groups born at the same time. This graphical framework is fundamental for tracking life paths and analyzing how demographic events impact different generations over time.

174. (D) The female population is exactly replacing itself.
The Net Reproduction Rate is a measure of population replacement that accounts for both fertility levels and the survival of daughters to childbearing age. When the NRR equals 1.0, it signifies that each generation of mothers is being replaced by exactly one surviving daughter on average. This state represents replacement-level fertility, where the population would eventually stabilize at a constant size if these specific mortality and fertility rates were maintained over a long period without any migration.

175. (A) Inductive
Inductive statistics, also known as inferential statistics, involve using data from a limited sample to make broader generalizations or predictions about an entire population. In the scenario where a news report uses a survey of two thousand voters to project the winner of a national election, researchers are applying statistical theory to infer the preferences of millions of people based on a smaller, representative group. This process allows for making informed predictions under conditions of uncertainty.

176. (B) $Pt = P0\ ert$
The exponential growth model represents a population that increases continuously at a constant relative rate. Its mathematical formula calculates the future population by multiplying the initial population by the mathematical constant 'e' raised to the power of the growth rate multiplied by time. This formula results in a J-shaped curve when population size is plotted against time, representing growth that occurs at every instant without the constraints of an upper carrying capacity or environmental limit.

177. (B) Provide a common set of weights (age structure) for comparing rates.
In the process of demographic standardization, a standard population is used as a common baseline to eliminate the confounding influence of different age structures. By applying the age-specific rates of different study populations to this single, uniform age structure, demographers can calculate standardized rates. This procedure provides a weighted average that allows for a fair comparison of mortality or fertility across populations, ensuring that observed differences reflect actual demographic risks rather than structural imbalances.

178. (D) Statement I is false, but Statement II is true.
The range is a highly unstable measure of dispersion because it is determined solely by the two most extreme values in a dataset; a single outlier can change it dramatically. In contrast, the standard deviation is a robust and comprehensive measure because its calculation includes every single value in the distribution. Any change in any data point will influence the mean and, consequently, the standard deviation, providing a precise indication of the variability across the entire dataset.

179. (C) The predicted income for a person with zero years of education.
In a linear regression equation, the constant term, or Y-intercept, represents the predicted value of the dependent variable when the independent variable is zero. In this specific model relating income to education, the value of twenty thousand represents the estimated annual income for an individual with no years of formal education. While this may be a theoretical value within the model, it provides the baseline from which income increases based on the years of education attained.

180. (D) It is simple to apply and has minimal data requirements.
The component method, or cohort-component method, is a sophisticated demographic approach for population projection that offers detailed age-sex structures and explicit assumptions about fertility, mortality, and migration. However, a

the demographic patterns observed in the past will persist without change for decades. In reality, factors such as social policy, economic shifts, and medical advancements can dramatically alter fertility, mortality, and migration trends. This makes simple extrapolation less reliable for accurately forecasting far-reaching demographic futures.

196. (D) Population pyramid
A population pyramid is a standard demographic graph used to display the age and sex composition of a population. It consists of two back-to-back bar charts, with age groups on the vertical axis and population numbers or percentages on the horizontal axis, usually separated by gender. The overall shape of the pyramid provides immediate visual insights into the demographic history, current status, and future growth potential of a population, reflecting decades of fertility, mortality, and migration patterns.

197. (C) Population stabilization implies a zero or near-zero growth rate.
Population stabilization describes a demographic condition where a population's size remains relatively constant over time, resulting in a growth rate of zero or near zero. This is achieved when the balance of births, deaths, and migration is neutral. Unlike doubling time, which is inversely related to growth rate, or NRR, which indicates potential generation-level change, stabilization refers to the actual state of total size maintenance. It is often a long-term demographic goal associated with sustainable development and resource planning.

198. (B) Estimating the population in 2025 using census data from 2011 and 2021.
Extrapolation is a statistical process used to estimate values that lie beyond the range of a known dataset. In this example, using population counts from the 2011 and 2021 censuses to predict the population size for the year 2025 constitutes extrapolation. This method assumes that the growth trends established between the two census points will continue into the future. It is a common technique for short-term forecasting when more detailed demographic component data is unavailable.

199. (D) 15
The median is the value that occupies the middle position in a dataset when all observations are arranged in numerical order. In the provided set of seven numbers—ten, twelve, twelve, fifteen, sixteen, eighteen, and twenty-five—the number fifteen is the fourth value. This means exactly three values fall below it and three values fall above it. Because it is a positional measure of central tendency, the median is not affected by the specific numerical values of the other data points.

200. (A) Cohort-component method
The component method of population projection is frequently referred to as the cohort-component method because it involves tracking specific age and sex cohorts through time. For each cohort, demographers apply separate assumptions for the components of change: births, deaths, and migration. This detailed approach allows for the projection of not only the total population but also its future structural composition. It is the most widely used demographic technique for making reliable national and regional population forecasts for planning purposes.

201. (C) The theoretical probability distribution of the means from all possible samples of a given size.
The sampling distribution of the mean is a fundamental concept in inferential statistics. It represents the probability distribution of the means of every possible sample of a specific size that could be drawn from a population. This theoretical distribution follows specific mathematical properties, such as the central limit theorem, which allow researchers to determine how much a single sample mean is likely to vary from the actual population mean, facilitating the estimation of population parameters.

202. (A) United Nations
The United Nations is globally recognized for producing the "World Population Prospects," which includes projections for every country. A key feature of these projections is the provision of high, medium, and low variants. These variants are based on different plausible assumptions regarding future trends in fertility, allowing demographers and policymakers to consider a range of possible demographic outcomes. This multi-scenario approach is essential for long-

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248. (A) It measures the strength and direction of a linear relationship.
Correlation is a statistical measure that quantifies the strength and direction of the linear association between two variables, expressed as a coefficient between negative one and positive one. It identifies how closely changes in one variable correspond to changes in the other. However, a high correlation does not prove causation; an association may be due to other underlying factors. Furthermore, correlation is typically used for continuous numerical data rather than categorical variables in demographic and statistical research.

249. (D) a, b, c, d, e
Population projection involves various methodologies, each with specific characteristics. The component method is data-intensive but provides detailed age-sex structure outputs. Logistic curves are useful for modeling growth toward a carrying capacity, while arithmetic models assume constant absolute increases. Sub-national projections are uniquely challenged by internal migration flows. Finally, international bodies like the United Nations and the World Bank are key providers of global demographic projections. Understanding these diverse methods and their applications is essential for accurate population analysis and planning.

250. (B) Both Statement I and Statement II are false.
Demographic tools have specific, well-defined purposes. The Lexis diagram is a graphical tool used to visualize the relationships between age, calendar time, and cohorts, rather than a method for statistical hypothesis testing. Similarly, a population pyramid is a two-dimensional graph specifically designed to represent the age and sex structure of a population at a single point in time, not for relating time and demographic events. Correctly identifying the functions of these analytical tools is fundamental for sound demographic research and data visualization.

251. (B) A percentage is a proportion multiplied by 100, expressing the subgroup's share of the total.
In demographic analysis, a proportion represents the relationship between a specific population subgroup and the entire population. To convert this measure into a percentage, the proportion is multiplied by one hundred. This specific calculation effectively expresses the subgroup's relative share of the total population in a standardized format that is easy to interpret.

252. (A) The numerator of a rate is the number of events, while the numerator of a proportion is a subgroup of the denominator.
A fundamental distinction exists between rates and proportions in demography. A proportion uses a numerator that is a subset of the denominator, representing a part of the whole. Conversely, a demographic rate measures the frequency of specific events occurring within a population over time, meaning the numerator consists of the total number of those events.

253. (C) Accurate rates of events like mortality.
Person-years represent the total time individuals in a population are at risk of experiencing a specific demographic event. This concept is essential for calculating accurate rates, such as mortality, because it accounts for the actual time each person was exposed to the risk of the event, ensuring that the resulting frequency measure is statistically precise and meaningful.

254. (D) The prevalence of the disease.
The total number of existing and new cases of a condition in a population at a specific point in time is defined as prevalence. In this scenario, the figure representing individuals already having the disease on a specific date indicates the prevalence, whereas the new cases identified during the year would represent the incidence rate for that population.

255. (C) A ratio
A ratio is a demographic measure that quantifies the relationship between two distinct population subgroups. Unlike a proportion, which compares a part to the whole, a ratio compares one subgroup directly to another. Expressing the number of males relative to females, often per hundred, is a classic example of using a ratio to understand population composition.

256. (B) Arithmetic growth
Arithmetic growth is a basic mathematical model used to describe population trajectories. It assumes that a population increases by the same absolute number of individuals during each equal time period. This results in a linear trend

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By explicitly modeling fertility, mortality, and migration, this method provides a detailed forecast of future population size and structure. This allows demographers to account for expected changes in age-specific rates, making it more robust and demographically meaningful than simple mathematical models that rely only on total population trends from the past.

211. (C) It has very low data requirements.
The component method is a sophisticated demographic tool for population projection that provides detailed structural information and allows for complex scenario analysis. However, a major disadvantage is that it has high data requirements. It necessitates precise age-sex specific data for the base population and for future assumptions regarding births, deaths, and migration. This makes it more challenging to implement than mathematical curve-fitting methods, which only require total population counts from a few historical time points.

212. (C) a, b, c, d
Statistical analysis utilizes various fundamental measures. The mean, median, and mode are tools for identifying the center of a data distribution. The standard deviation quantifies the spread or variability of individual points. These measures are central to descriptive statistics. Note that a correlation of plus 1.0 indicates a perfect positive linear relationship, but it does not imply that one variable causes the other. Establishing causality requires additional experimental or theoretical evidence beyond simple correlation analysis.

213. (C) Accounts for differences in age structure.
The primary advantage of a standardized rate over a crude rate is that it removes the confounding effect of differing age compositions between populations. Crude rates are simple averages that are heavily influenced by the proportion of young or old individuals in a group. Standardization applies local age-specific rates to a uniform standard population structure, allowing for more accurate comparisons of the underlying demographic risks, such as mortality or fertility, across different societies or time periods.

214. (B) Polynomial curve
The polynomial growth curve is a mathematical method for population projection that involves fitting a higher-degree equation to historical population data. The equation consists of a series of terms with increasing powers of time, which allows the curve to flex and fit complex historical trends that may not be linear. While this flexibility makes it useful for modeling past changes, the method can produce highly unrealistic results when extrapolated far into the future, making it more suitable for short-term analysis.

215. (A) 1, 2, 3, 4
The methodology for population projection has evolved significantly over time. Early demographers used simple arithmetic extrapolation. This was followed by the development of more complex mathematical models like the logistic curve. The cohort-component method later became the standard for providing detailed age-sex structures. Most recently, international bodies like the United Nations have incorporated probabilistic projections, which include uncertainty intervals to provide a range of potential demographic futures rather than a single deterministic forecast.

216. (A) Inter-censual estimate
An inter-censual population estimate refers to an estimation made for a date that falls between two completed census points. In this case, since population counts are available for both 2001 and 2011, any estimate for 2005 is considered inter-censual. These estimates are highly reliable because they can be adjusted using the "closing error" from the 2011 census, ensuring the calculated trend aligns with actual data at both the beginning and end of the specified period.

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217. (B) P-3, Q-4, R-1, S-2
Population projection models are distinguished by their fundamental assumptions about how a population increases. The arithmetic model assumes a constant absolute number of additions each year. The exponential model assumes a constant relative rate of continuous growth. The logistic model incorporates an environmental upper limit or carrying capacity. The component method is a demographic approach that explicitly models future size and structure based on separate assumptions for fertility, mortality, and migration rates.

218. (A) Inference
Statistical inference, also known as inductive statistics, is the process of using data collected from a representative sample to make broader conclusions or generalizations about the entire population. This involves using mathematical techniques to estimate population parameters and to test hypotheses about characteristics or relationships within the group. It provides a structured way to draw meaningful and scientifically valid insights from limited data, which is essential when analyzing large or inaccessible populations.

219. (D) Statement I is false, but Statement II is true.
The standard error and the standard deviation are distinct statistical measures. The standard deviation describes the variability of individual data points within a single sample or population. The standard error, however, represents the standard deviation of the sampling distribution of a statistic, such as the mean. Crucially, as the sample size increases, the standard error decreases because a larger sample provides a more stable and precise estimate of the actual population parameter being studied.

220. (B) Growth rate
Doubling time represents the number of years required for a population to double its current size. It is a mathematical function directly related to the annual growth rate. Assuming the rate of growth remains constant, a population with a higher growth rate will have a shorter doubling time. This relationship is often estimated using the "Rule of 70," where dividing seventy by the growth rate percentage provides a quick approximation of the time needed for doubling.

221. (C) Population density
Most specialized demographic projections are derived by applying specific rates to a base population forecast. For example, school enrollment uses progression rates, labor force uses participation rates, and household projections use headship rates. Population density, however, is a calculated ratio of total population to land area rather than a projection made by applying a specific rate of behavior to demographic cohorts. It is a secondary measure derived from the final population and geographic data.

222. (D) Diagonal band
On a Lexis diagram, which plots time on the horizontal axis and age on the vertical axis, a cohort represents a group of individuals who experience a demographic event, typically birth, at the same time. This group is visualized as a diagonal band moving upwards and to the right. This is because as calendar years progress, the members of the cohort simultaneously increase in age, resulting in a continuous path that maintains a constant relationship between time and age.

223. (A) The next generation of daughters will be 50% larger than the current generation of mothers.
The Net Reproduction Rate measures the average number of daughters a newborn girl is expected to have, assuming she survives through her childbearing years under current fertility and mortality conditions. An NRR of 1.5 indicates that, on average, each mother will be replaced by 1.5 daughters who reach childbearing age. This implies that the female population will grow by fifty percent with each new generation, signifying fertility levels well above the replacement threshold needed for long-term stabilization.

224. (B) The curve can produce wildly unrealistic results when extrapolated far into the future.
The polynomial growth curve uses complex mathematical equations to fit historical population trends. While flexible, its major limitation is instability during long-term extrapolation. Because the model relies on higher-degree terms, even slight variations in historical data can cause the projected curve to trend toward impossible values, such as negative populations or unrealistic growth spikes. This makes polynomial models more suitable for descriptive analysis of past data rather than for making reliable, long-distance demographic forecasts.

225. (B) The standard deviation is the positive square root of the variance.
Variance and standard deviation are both measures of statistical dispersion that quantify the spread of data around the mean. The variance is calculated as the average of the squared deviations from the mean. The standard deviation is simply the positive square root of the variance. Because it is expressed in the same units as the

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original data, the standard deviation is often more intuitive and widely used for describing variability in research and demographic analysis.

226. (A) A rate involves a measure of time in the denominator.
In demography, a rate is distinguished from a ratio by its dynamic nature. A rate measures the frequency of an event, such as births or deaths, occurring over a specified period within a population at risk. Therefore, its denominator must include a measure of time. A ratio, however, is a static measure that compares two distinct demographic groups or quantities at a single point in time, such as the sex ratio comparing males to females.

227. (C) a, b, d
Descriptive statistics are used to organize and summarize the characteristics of a specific dataset. Examples include calculating the mean age, creating histograms for visual representation, and determining the standard deviation to measure variability. In contrast, inductive statistics, such as using a sample to estimate national rates or performing hypothesis tests, involve making broader conclusions about a larger population based on limited sample evidence. Both branches are essential for a comprehensive statistical analysis of demographic data.

228. (D) Component method of projection
The balancing equation is a fundamental demographic tool used in the component method of population projection. It states that the population at the end of a period equals the initial population plus the number of births, minus the number of deaths, plus net migration (immigrants minus emigrants). This equation provides the mathematical framework for tracking population change over time and for ensuring that all components of demographic growth are explicitly accounted for in the projection process.

229. (C) Positively skewed
In a distribution where the mean is greater than the median, and the median is greater than the mode, the data is described as being positively skewed. This occurs when there are several extreme values at the high end of the distribution that pull the arithmetic mean toward the right tail. Household income is a typical example of such a distribution. Identifying skewness is important for choosing the most appropriate measure of central tendency to represent the center of the data.

230. (B) Headship rates
Household projections estimate the future number of family or residential units by applying age-sex specific headship rates to a previously established population projection. A headship rate represents the proportion of individuals in a specific demographic group who are identified as the head of a household. This method allows urban planners and policymakers to forecast housing demand and the need for residential services by considering both the size of the population and its changing social and age structure.

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231. (D) Inferential statistics
Inductive statistics is another term for inferential statistics. This branch of statistics involves using data collected from a representative sample to make broader conclusions, predictions, or inferences about the entire population from which the sample was drawn. It utilizes mathematical techniques such as hypothesis testing and the calculation of confidence intervals. This allows researchers to quantify the uncertainty and error associated with their estimates, providing a scientifically sound basis for population-level generalizations.

232. (A) Use the cohort-component method.
The official population projections for India, prepared by the Expert Committee, utilize the cohort-component method. This sophisticated approach involves making detailed assumptions about future fertility, mortality, and migration rates and applying them to specific age and sex cohorts. This method is preferred because it provides comprehensive information on the future structural composition of the population, which is essential for detailed long-term national planning, resource allocation, and the development of social and economic policies.

233. (B) Both Statement I and Statement II are false.
Demographic measures are categorized based on their mathematical properties. The sex ratio is a ratio because it compares two distinct

demographic groups at a single point in time. The crude death rate is a rate because it measures the frequency of events (deaths) occurring over a specific time period relative to the population at risk. Confusing these terms leads to inaccuracies in demographic analysis; understanding the distinction between static comparisons and dynamic measures of event frequency is essential.

234. (A) The strength of the evidence against the null hypothesis.
In the process of statistical hypothesis testing, a test of significance is used to quantify the strength of the evidence provided by sample data against a null hypothesis. It calculates a probability value, or p-value, which represents the likelihood of obtaining the observed result if the null hypothesis were actually true. A very low p-value suggests that the findings are unlikely to be due to random chance, allowing researchers to reject the null hypothesis with confidence.

235. (D) Logistic
The logistic growth curve is a mathematical population projection model that intrinsically includes an upper limit, known as the carrying capacity. This limit represents the maximum population size that the environment can sustain. As the population grows and approaches this threshold, the growth rate automatically slows down, creating an S-shaped trend. This feature prevents the model from projecting infinite growth, making it a more realistic tool for long-term demographic forecasting in environments with finite resources.

236. (B) Age-standardized death rates
To accurately compare the underlying mortality risk between populations with very different age structures, such as Florida and Alaska, demographers must use age-standardized death rates. Crude death rates are misleading because they are heavily influenced by the proportion of elderly individuals in the population. Standardization removes this confounding effect by applying local rates to a common standard age structure, ensuring that observed differences reflect actual health and mortality risks rather than just differences in population aging.

237. (C) The precision of a sample statistic as an estimate of the population parameter.
The standard error is a fundamental measure in inferential statistics that quantifies the precision of a sample statistic, such as the mean, when used as an estimate for the actual population parameter. It represents the standard deviation of the sampling distribution. A smaller standard error indicates that the sample results are likely to be closer to the true population value. This statistic is essential for determining confidence intervals and for assessing the reliability of conclusions drawn from sample data.

238. (A) Both A and R are true and R is the correct explanation of A.
The United Nations publishes multiple projection variants to provide a comprehensive view of possible demographic futures. Because the future path of fertility is inherently uncertain, offering high, medium, and low scenarios based on different assumptions allows users to evaluate the impact of various demographic trajectories. This approach helps policymakers and researchers understand the potential range of population outcomes, facilitating more flexible and informed long-term planning in response to the uncertainties of global demographic change.

239. (A) The percentage of the population aged 65 and over.
A demographic proportion represents a part of a whole, where the numerator is a subgroup that is entirely contained within the larger group represented by the denominator. The percentage of the population aged sixty-five and over is a classic example of a proportion, as it identifies the share of a specific age group relative to the total population. This differs from ratios, which compare independent groups, and from rates, which measure events occurring over a period of time.

240. (B) Inter-censual is for a date between two censuses, while post-censual is for a date after the last census.
Population estimates are categorized according to their chronological relationship with census dates. Inter-censual estimates are made for years falling between two previously completed censuses, while post-censual estimates are for years following the most recent census. Inter-

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censual estimates are generally more accurate because they can be adjusted using data from both the beginning and end of the period. Both are essential for maintaining continuous demographic records for planning and research during the decennial census cycle.

241. (B) To calculate rates accurately when individuals are observed for different lengths of time.
Person-years provide a precise measure of the total time that a study population is exposed to the risk of a demographic or health event. By summing the exact duration of observation for each individual, demographers can calculate accurate rates that account for people entering or leaving the population at different times. This cumulative time measure serves as the denominator for rates, ensuring that the intensity of the event's occurrence is correctly related to the total period of exposure.

242. (A) Mean > Median > Mode
In a positively skewed distribution, a few extremely high values pull the arithmetic mean toward the right tail of the data. The median, as the middle positional value, is less affected by these outliers and remains lower than the mean. The mode, representing the most frequent value, is typically at the peak on the left. Consequently, the characteristic relationship in such distributions is that the mean is greater than the median, which in turn is greater than the mode.

243. (C) Past population totals for at least three time points.
The component method, or cohort-component method, is a demographic projection approach that requires detailed age-sex specific data for the base population and separate assumptions for future fertility, mortality, and migration. Unlike mathematical curve-fitting methods, it does not require a long time series of past total population counts to function. Instead, it simulates future changes by applying demographic rates to the internal structure of the population, providing a more detailed forecast of future size and age-sex composition.

244. (D) Straight line
The exponential growth model assumes that a population increases continuously at a constant relative rate. Mathematically, this relationship is described by an exponential function. When the natural logarithm of the population size is plotted against time, the resulting graph is a straight line. The slope of this line represents the constant annual exponential growth rate. This transformation is a standard demographic technique for visualizing and calculating continuous growth rates from population data over multiple time periods.

245. (B) P-2, Q-4, R-1, S-3
Different demographic projections rely on specific key rates for their calculations. Workforce projections use labor force participation rates applied to the working-age population. School enrollment projections often utilize grade progression rates to track student movement. Household projections rely on headship rates to determine the number of family units. General population projections, especially for replacement analysis, frequently use the net reproduction rate. Matching these rates to their respective projection types is essential for accurate demographic forecasting and social planning.

246. (B) Mean
Among the measures of central tendency, the arithmetic mean is the most sensitive to outliers in a dataset. This is because its calculation involves the sum of every individual observation; a single very high or very low value will pull the mean in its direction. In contrast, the median and mode are positional or frequency-based measures and are much more robust. The interquartile range, which focuses on the middle fifty percent of data, is also resistant to extreme values.

247. (D) Arithmetic
The arithmetic growth model is based on the fundamental assumption that a population increases by a fixed absolute amount of people over each unit of time. This results in a linear trend when population size is plotted against time. Unlike the geometric or exponential models, which assume that the rate of growth is constant, the arithmetic model assumes the amount of change is constant. This approach is generally most suitable for short-term estimates in stable demographic conditions.

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266. (B) To graphically represent the location of demographic events in time.
The Lexis diagram is a specialized graphical tool used to visualize and track the location of demographic events in time. By plotting events on a two-dimensional grid, it provides a structured framework for analyzing the timing and duration of various population processes, ensuring that births, deaths, and migrations are accurately situated within their proper temporal context.

267. (B) Horizontal: Period (calendar time); Vertical: Age
A standard Lexis diagram utilizes a two-dimensional coordinate system to represent demographic data. The horizontal axis typically depicts calendar time, also known as the period. Meanwhile, the vertical axis represents age. This layout allows for the simultaneous tracking of age, period, and cohort, providing a comprehensive view of how demographic events occur over time for individuals.

268. (A) A group of individuals experiencing the same event in the same time interval.
In demography, a cohort is defined as a specific group of individuals who experience the same demographic event during the same time interval. A birth cohort, for instance, includes all people born in a particular year. Tracking cohorts over time allows researchers to analyze how shared experiences and historical influences affect specific groups throughout their entire lives.

269. (C) As a diagonal line moving upwards and to the right.
On a Lexis diagram, the life path of an individual is illustrated as a diagonal line, frequently referred to as a lifeline. As a person ages through time, this line moves simultaneously upwards on the vertical age axis and to the right on the horizontal calendar time axis. Demographic events are then plotted directly onto these diagonal lifelines.

270. (D) Age, period, and cohort
The Lexis diagram is a powerful analytical tool that helps demographers distinguish between three distinct temporal influences: age, period, and cohort. Age effects relate to biological and social maturation, period effects involve influences affecting all ages at a specific time, and cohort effects represent influences unique to groups born or experiencing specific events during the same era.

271. (C) Linear Projection
Linear projection is a mathematical method used to estimate future population size. This approach operates on the assumption that a population will continue to grow by the same absolute number of people observed during past periods. This mirrors the arithmetic growth model, resulting in a straight-line trend when the projected population figures are plotted over time.

272. (B) S-shaped curves that model populations approaching a limit.
Both the Gompertz and Logistic growth curves are characterized as S-shaped models used for population projection. These curves represent populations that experience slow initial growth, followed by acceleration, and eventually a slowdown as they approach a specific carrying capacity or saturation point. They are more complex than linear models and account for potential environmental or resource constraints.

273. (D) It assumes a constant rate of growth.
Exponential projection is a common mathematical method for forecasting future population trends, particularly in the short term. This method assumes that the population will grow at a constant rate over time, which means the absolute increase grows larger in each period. It is mathematically equivalent to the continuous exponential growth model often used in basic demographic analysis.

274. (A) The Logistic curve is symmetrical, while the Gompertz curve is asymmetrical.
While both the Gompertz and Logistic curves are used to model populations approaching a limit, they differ in their mathematical shapes. The Logistic curve follows a symmetrical S-shape. In contrast, the Gompertz curve is asymmetrical, exhibiting a different rate of growth and a slower convergence as the population size nears its upper limit or specific carrying capacity.

275. (C) Complex, non-linear trends.
Polynomial growth curves are utilized in population projection to capture complex, non-linear trends that simpler linear or exponential models might miss. By fitting these curves to

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over time, where the growth amount remains constant regardless of the total population size at any given stage of the analysis.

257. (D) Geometric growth assumes discrete time intervals, while exponential growth assumes continuous growth.
Both geometric and exponential models describe population increases by a constant factor rather than a constant amount. The primary difference lies in the timing of growth. Geometric growth occurs at discrete intervals, such as annually, while exponential growth is modeled as a continuous process occurring at every moment. This distinction significantly affects the mathematical formulas used by demographers.

258. (A) Achieving population stabilization
Achieving a net reproduction rate of unity, or one, is a critical demographic threshold. It indicates that a cohort of women is having just enough daughters to replace themselves in the next generation. This state is fundamentally linked to population stabilization, where the total size of the population eventually ceases to grow or decline over the long term.

259. (C) Doubling time
Doubling time is a demographic concept used to project how long it will take for a population to increase its size by twofold. This calculation assumes that the current growth rate remains constant over time. It provides a useful indicator of the speed of population growth and is typically derived from the current annual exponential growth rate.

260. (A) Geometric
When a population increases by a constant proportion or factor during discrete time intervals, it follows a geometric growth pattern. This model results in a compound growth effect, where the absolute increase grows larger each period even though the growth factor remains the same. It is commonly applied to populations analyzed on an annual or decadal basis.

261. (D) They are influenced by the population's composition, such as its age structure.
Crude rates can be misleading because they fail to account for the underlying composition of a population, particularly its age and sex structure. For example, a population with many elderly people will naturally have a higher crude death rate than a younger population, even if the actual risk of dying at each specific age is identical.

262. (B) To adjust rates to allow for comparison by removing the effect of compositional differences.
Standardized methods are employed in demography to adjust crude rates and remove the confounding effects of population composition. By eliminating differences caused by factors like age structure, these methods allow for more accurate and meaningful comparisons of fertility or mortality levels between different populations or within the same population over several different time periods or locations.

263. (C) A single, common standard population structure.
The statistical technique of standardization involves applying the observed age-specific rates from the populations under study to a single, common standard population structure. This process calculates what the overall rate would be if all populations had the same age composition. This allows researchers to compare the underlying demographic risks independent of varying population structures across study groups.

264. (D) A crude death rate that is lower than expected.
A population composed of a high percentage of young adults and few elderly individuals will likely show a lower crude death rate than expected. This occurs because younger age groups naturally have lower mortality risks. Consequently, the young age structure can mask high age-specific mortality rates, making the overall population appear healthier than it actually is.

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265. (A) It provides a more comparable measure of the underlying risk of an event.
Standardized rates offer a significant advantage over crude rates by providing a more comparable measure of the underlying risk of demographic events. By neutralizing the influence of confounding variables like age structure, standardized rates allow for a fair comparison of fertility or mortality levels across different populations that have diverse demographic compositions and age distributions.

term planning under conditions of uncertainty in global and regional population dynamics.

203. (D) Test of Significance - To assess the likelihood that an observed sample result is due to chance.
A test of significance is a mathematical procedure used in inferential statistics to evaluate the strength of evidence provided by a sample against a specific hypothesis about the population. It calculates the probability that the observed result occurred simply because of random sampling variation. If this probability is very low, the result is deemed statistically significant, allowing researchers to reject the null hypothesis and conclude that an actual effect or relationship likely exists in the broader population.

204. (B) The age structure must also be stable.
For a population to achieve stabilization with a Net Reproduction Rate of exactly unity, it must reach a state where its age structure is stable. This means that the proportion of the population in each age group remains constant over time. Even if fertility reaches replacement level, the population may continue to grow for several decades due to "population momentum" if it has a young age structure. True stabilization is only achieved when these structural imbalances have worked themselves out.

205. (A) Both Statement I and Statement II are true.
Population estimates are categorized according to their chronological relationship with censuses. Post-censual estimates are produced for current or past years following the latest census, using it as a starting point. Inter-censual estimates cover the period between two completed censuses and are generally more accurate because they can be adjusted based on the results of the second census. Both types of estimates are critical for maintaining continuous population data for planning and social research between decennial census counts.

206. (D) 2%
The rate of natural increase measures the internal growth of a population and is calculated by subtracting the crude death rate from the crude birth rate. In this case, with thirty births and ten deaths per one thousand people, the natural increase is twenty per one thousand. To express this as a percentage, you divide by ten, resulting in an annual growth rate of two percent. This metric identifies the speed of population expansion excluding the impact of international or internal migration.

207. (A) It is a graphical representation of population density.
A population pyramid is a graphical tool used to represent the age and sex distribution of a population, not its density. The vertical axis shows age groups, and the horizontal axis shows the number or proportion of people in each group, separated by gender. The shape of the pyramid reflects historical demographic events and current trends in fertility and mortality. Population density, however, relates the total population to land area and is typically represented using maps or simple numerical ratios.

208. (A) Both A and R are true and R is the correct explanation of A.
Direct standardization is a critical demographic technique used to facilitate fair comparisons of mortality or fertility across populations with different age structures. The process requires detailed age-specific rates from each population. These rates are applied to the structure of a common standard population to determine what the overall rate would be if all groups shared that same age distribution. This effectively removes the confounding influence of age, ensuring that differences in the standardized rates represent true demographic risks.

209. (B) Incidence
Incidence is a demographic and epidemiological measure that tracks the occurrence of new cases of a specific condition in a population over a defined period. In this scenario, the five hundred new cases reported in a single week represent the incidence of the disease. This metric is essential for understanding the rate at which an infection is spreading and for monitoring the immediate impact of public health interventions. It differs from prevalence, which includes all existing cases at one time.

210. (A) Component method
For long-term population projection at the national level, the component method is the most suitable approach when high-quality vital registration and census data are available.

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historical data, demographers can represent more intricate patterns of change. However, while they are useful for describing past data, they can be less reliable for making accurate long-term future forecasts.

276. (A) Fertility, mortality, and migration
The component method of population projection is a detailed approach that separately analyzes and projects the three primary drivers of population change. These core components are fertility, mortality, and migration. By making specific assumptions about the future trends of each component, demographers can build a more nuanced and accurate projection of the total future population size.

277. (D) A base population disaggregated by age and sex.
Initiating the component method of population projection requires a detailed base population as a starting point. This initial population must be disaggregated by age and sex. This allows demographers to apply specific fertility, mortality, and migration assumptions to each relevant age-sex group, facilitating a more precise aging of the population through the specified projection period.

278. (B) The projected age-sex structure of the population.
Specialized projections for the future labour force, school enrolment, and households are built upon the detailed age-sex structure produced by the component method. By applying specific participation or enrolment rates to these projected demographic groups, planners can estimate future needs for schools and employment opportunities, making the component method highly versatile for various sectors.

279. (C) It can better account for migration, which is often more significant at this level.
The component method is particularly valuable for sub-national population projections, such as for states or districts, because it effectively incorporates migration. Migration often plays a much larger role in population change at the local level than at the national level. By projecting migration separately, this method provides more accurate and detailed results for smaller geographical units.

280. (D) By applying projected age-specific fertility rates to the female population.
In the component method, new births are incorporated into the projected population by applying projected age-specific fertility rates to the female population within reproductive age groups. This process ensures that the number of births is directly tied to the specific demographic characteristics and size of the women who are most likely to have children during the period.

281. (A) The United Nations
The United Nations is recognized for producing comprehensive global population projections that serve as a standard benchmark for countries worldwide. Through its Population Division, the UN provides authoritative forecasts used for international planning and resource allocation. These projections often include multiple variants to account for different potential future demographic scenarios and inherent uncertainties in forecasting.

282. (B) Its economic modeling and development project planning.
Population projections generated by the World Bank are essential components of its global operations. These forecasts are integrated into the organization's economic modeling, development reports, and long-term project planning. They help the World Bank assess future economic trends and developmental needs by focusing on demographic variables that are closely linked to a country's overall economic progress.

283. (B) The Expert Committee of the Government of India
Within India, the Expert Committee of the Government of India is the primary body responsible for creating official population projections. These projections, often formulated by experts from the office of the Registrar General of India, are used for national and sub-national planning, including financial resource allocation and the setting of various developmental targets across different states and territories.

284. (A) The uncertainty surrounding future demographic trends.
The United Nations frequently provides low, medium, and high projection variants to address the inherent uncertainty associated

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around 105 boys for every 100 girls.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

17. An Age-Sex Pyramid with a wide base and a narrow top is characteristic of a population that is:
(A) Stable and ageing.
(B) Rapidly growing and young.
(C) Declining and old.
(D) Experiencing low birth rates.

18. What does a high Distribution-Dissimilarity Index value indicate?
(A) A high degree of spatial segregation between two population groups.
(B) A very even distribution of two population groups across spatial units.
(C) A high overall population density.
(D) A rapid rate of urbanization.

19. Which of the following is considered an emerging issue related to the elderly?
(A) High fertility rates among the older population.
(B) Increasing political participation of the youth.
(C) The need for specialized healthcare and social security systems.
(D) A decline in the median age of the population.

20. Match List I (Indicator) with List II (Formula Component) and select the correct answer using the codes given below.
List I:
P. Child Dependency Ratio,
Q. Old-Age Dependency Ratio,
R. Sex Ratio at Birth,
S. Child-Women Ratio
List II:
1. Children 0-4 per 1000 women 15-49,
2. Population 65+ / Population 15-64,
3. Female births per 1000 male births,
4. Population 0-14 / Population 15-64
(A) P-4, Q-2, R-3, S-1
(B) P-1, Q-3, R-2, S-4
(C) P-4, Q-1, R-3, S-2
(D) P-2, Q-4, R-1, S-3

21. Which of the following is the most appropriate measure to study the concentration of population distribution across different regions?
(A) Crude birth rate
(B) Total fertility rate
(C) Gini's concentration ratio
(D) Infant mortality rate

22. The relevance of age-sex structure in population dynamics is best explained by its influence on:
(A) The specific geographical coordinates and boundary locations of a total population.
(B) The future growth potential, labor supply, and social needs of a population.
(C) The internal linguistic diversity and ethnic variety found within a population.
(D) The historical migration patterns and long-term movement cycles of a population.

23. Consider the following statements regarding the aspects of population ageing:
a. It results from the interplay of fertility, mortality, and migration.
b. A key measure is the increase in the median age of the population.
c. Population ageing is a phenomenon exclusive to developed countries.
d. It leads to an increase in the old-age dependency ratio.
e. The process of ageing at the top of the pyramid is faster than at the bottom.
Which of the above statements are correct?
(A) a, b, and c only
(B) b, c, and d only
(C) a, b, and d only
(D) c, d, and e only

24. A key economic factor affecting the spatial distribution of population is:
(A) The location of employment opportunities and industrial centers.
(B) The presence of diverse ethnic groups.
(C) The dominant religious practices in a region.
(D) Government policies on marriage age.

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distance that sample means are expected to fall from the true population mean. A smaller standard error indicates that sample-based estimates are more likely to be precise and closely reflect the actual population parameter.

294. (B) Sample statistic
When a researcher calculates a numerical value, such as the mean age, from a subset of a larger population, that value is classified as a sample statistic. In this case, the mean age derived from the one thousand randomly selected individuals serves as a statistic that is used to estimate the broader population parameter, representing the whole country.

295. (C) The sample mean is likely a more precise estimate of the population mean.
A smaller standard error signifies that the various possible sample means are clustered closely around the true population mean. This implies that any single sample mean obtained in a study is likely to be a more precise and reliable estimate of the actual population parameter. It reduces the margin of error and increases overall confidence in the findings.

296. (D) Measures of central tendency
The mean, median, and mode are specific statistical tools categorized as measures of central tendency. These measures provide a single numerical value that aims to represent the center or most typical value within a given dataset. They help summarize complex data by identifying the point around which most of the individual data points are normally distributed.

297. (A) The standard deviation
Measures of dispersion are used to describe the spread or variability within a dataset. The standard deviation is a primary example of such a measure, as it quantifies the average amount by which individual data points differ from the mean. Other examples include the range and variance, all of which indicate how clustered or scattered the values are.

298. (B) To use sample data to make generalizations about a larger population.
Inductive statistics, also known as inferential statistics, serve the purpose of using data collected from a sample to make broader generalizations or inferences about a larger population. This field of statistics allows researchers to draw conclusions and test hypotheses about populations that are too large to study in their entirety, using probability theory to account for error.

299. (B) Linear regression.
To model and predict the relationship between two variables, such as years of education and income level, linear regression is the most appropriate statistical method. Regression analysis examines how changes in an independent variable are associated with changes in a dependent variable, allowing researchers to estimate and forecast one value based on the known value of another.

300. (A) Interpolation
The statistical process of estimating an unknown value that falls within the range of established or known data points is called interpolation. This technique is commonly used to fill in gaps in data series. In contrast, extrapolation is used when estimating values that fall outside the range of observed data, which typically involves much higher uncertainty.

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(C) The country's terrain and physical geography.
(D) The rate of migration to urban areas.

34. A Lorenz curve that is very close to the line of perfect equality indicates:
(A) A very even or equitable distribution of population.
(B) A high concentration of population in a few areas.
(C) A rapidly growing population.
(D) A high degree of urbanization.

35. Match List I (Demographic Term) with List II (Characteristic) and select the correct answer using the codes given below.
List I:
P. Demographic Dividend,
Q. Population Ageing,
R. High Fertility,
S. Sex-selective migration
List II:
1. Increases older persons,
2. Economic growth potential,
3. Skews sex ratio,
4. Youthful population structure
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-1, R-4, S-3
(C) P-3, Q-4, R-1, S-2
(D) P-2, Q-3, R-4, S-1

36. Which of the following is NOT a measure of population concentration?
(A) Population Density
(B) Lorenz Curve
(C) Gini's Concentration Ratio
(D) Crude Death Rate

37. The components of population ageing include:
(A) Urbanization and industrialization.
(B) Immigration and emigration rates only.
(C) Ageing at the base and ageing at the apex of the population pyramid.
(D) Educational attainment and literacy levels.

38. Consider the following statements regarding the composition of India's population:
a. India is experiencing a demographic dividend due to its large youth population.
b. The sex ratio in India has historically been unfavorable to females.
c. There is significant variation in population density among Indian states.
d. Population ageing is not yet a concern for any state in India.
e. The tempo of urbanization in India has been consistently slow since independence.
Which of the above statements are correct?
(A) a, b, and c only
(B) c, d, and e only
(C) a, b, d, and e only
(D) a, b, c, and e only

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39. The sex structure of a population is primarily determined by the differential in:
(A) Educational levels between males and females.
(B) Labor force participation between males and females.
(C) Political rights between males and females.
(D) Mortality and migration rates between males and females.

40. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The Rank-Size Rule is rarely perfectly applicable to real-world urban systems.
Reason (R): Many countries exhibit a 'primate city' distribution where one city is disproportionately larger than all others, deviating from the rule's predictions.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

41. Which region would you expect to have the highest population density?
(A) A desert with limited water resources.
(B) A remote arctic tundra.
(C) A fertile river valley with a moderate climate.
(D) A high, rugged mountain range.

42. In population studies, the 'Median Age' is a significant indicator because:
(A) It reflects the overall age distribution and is a key measure of population ageing.
(B) It determines the total population size.

ratio in the source region.
c. Wars and conflicts often result in a lower proportion of males in specific age cohorts.
d. Government policies on family planning have no impact on age structure.
e. Increased life expectancy contributes to a higher proportion of the elderly.

Which of the above statements are correct?
(A) a, b, c, and d only
(B) b, c, d, and e only
(C) a, b, c, and e only
(D) a, c, d, and e only

9. The concept of population ageing primarily refers to:
(A) An increase in the total number of people in a country.
(B) A decrease in the birth rate.
(C) An increase in the proportion of older persons in a population.
(D) The average number of years a person is expected to live.

10. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The Lorenz curve for a perfectly even distribution of population would be a straight diagonal line.
Reason (R): The Gini's concentration ratio, derived from the Lorenz curve, measures the degree of inequality in a distribution.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

11. Which of the following is NOT a direct component of population change affecting its size?
(A) Fertility
(B) Mortality
(C) Migration
(D) Urbanization

12. Arrange the following stages in terms of their typical effect on the age structure of a population, starting from the one that creates the youngest structure:
1. Sustained low fertility and low mortality
2. High fertility and high mortality
3. High fertility and declining mortality
4. Declining fertility and low mortality

Which of the following sequences is correct?
(A) 2, 3, 4, 1
(B) 1, 4, 3, 2
(C) 3, 2, 1, 4
(D) 2, 1, 4, 3

13. The Total Dependency Ratio is calculated as:
(A) The ratio of the population aged 0-14 to the total working-age population.
(B) The ratio of the population aged 65 and over to the total working-age population.
(C) The sum of the child and old-age populations divided by the working-age population, multiplied by 100.
(D) The ratio of the working-age population relative to the non-working-age groups.

14. Which of the following is a social factor that can influence the age-sex structure of a population?
(A) Climate and topography
(B) Industrialization level
(C) Availability of natural resources
(D) Preference for male children

15. Consider the following statements about the Gini's concentration ratio:
a. It is a measure of statistical dispersion representing income or wealth inequality.
b. In population studies, it is adapted to measure the inequality of spatial distribution.
c. A Gini ratio of 0 represents perfect equality in distribution.
d. A Gini ratio of 1 represents maximal inequality, where one unit holds the entire population.

Which of the above statements are correct?
(A) a and b only
(B) c and d only
(C) a, b, and c only
(D) a, b, c, and d

16. Consider the following statements:
Statement I: The sex ratio is typically expressed as the number of females per 1000 males.
Statement II: The sex ratio at birth is usually skewed towards males, with a global average of

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CHAPTER 03
Population Composition and Change

1. Which of the following best defines the 'spatial distribution of population'?
(A) The total number of people living in a country.
(B) The arrangement of population on the Earth's surface.
(C) The rate at which a population is growing.
(D) The movement of people from one region to another.

2. 'Tempo of urbanization' is a measure that primarily indicates:
(A) The speed or rate of change in the level of urbanization.
(B) The absolute number of people living in cities.
(C) The total area covered by urban settlements.
(D) The ratio of the largest city to the second-largest city.

3. Identify the incorrect statement regarding population density.
(A) It is typically expressed as the number of people per unit of area.
(B) It provides a measure of population concentration.
(C) It is a static measure that remains constant across all geographical regions.
(D) It can vary significantly within a country and between countries.

4. Which of the following factors is considered a demographic factor affecting the age-sex structure of a population?
(A) Literacy rate
(B) Occupation
(C) Religious beliefs
(D) Fertility

5. Match List I (Concept) with List II (Measurement) and select the correct answer using the codes given below.
List I:
P. Lorenz Curve,
Q. Rank-Size Rule,
R. Population Density,
S. Median Age
List II:
1. Central tendency of age distribution,
2. Persons per square kilometer,
3. Inequality in distribution,
4. Hierarchy of urban settlements
(A) P-3, Q-4, R-2, S-1
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-1, R-4, S-2
(D) P-4, Q-3, R-2, S-1

6. Which statement is true about the age structure of developed countries compared to developing countries?
(A) Developed countries have a significantly younger population.
(B) Developed countries typically have a higher proportion of their population in the older age groups.
(C) Developing countries have a lower child dependency ratio.
(D) The base of the age-sex pyramid is wider in developed countries.

7. The 'demographic dividend' refers to the economic growth potential that can result from:
(A) An increasing proportion of the population in the older age groups requiring care.
(B) A rapid increase in birth rates accompanied by a decline in overall death rates.
(C) A high total dependency ratio where the youth population exceeds labor resources.
(D) A shift in the population's age structure, with a larger proportion being of working age.

8. Consider the following statements regarding the factors affecting age-sex structure:
a. High fertility rates lead to a younger population structure.
b. Emigration of young adults can alter the sex

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25. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): In India, there are significant spatial variations in the sex ratio across states.
Reason (R): Socio-cultural factors, including son preference and female neglect, contribute to these regional imbalances in the sex ratio.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

26. Which of the following best describes the Rank-Size Rule?
(A) The population of a city is inversely proportional to its rank in the size hierarchy.
(B) The law that dictates the absolute maximum permissible size for a metropolitan city.
(C) The specific measure of the ratio between urban settlements and rural populations.
(D) The theoretical model explaining specific cultural reasons for migration to large cities.

27. Identify the correct pair.
(A) Lorenz Curve - Measures population growth rate.
(B) Rank-Size Rule - Measures the sex ratio of a population.
(C) Gini's Ratio - Calculates the total dependency ratio.
(D) Median Age - Divides a population into two equal size groups, one older and one younger.

28. From a global perspective, spatial changes in the distribution of population over the last century show a significant shift towards:
(A) Polar regions
(B) Coastal and urban areas
(C) Desert areas
(D) High-altitude mountain regions

29. What is the Child-Women Ratio a measure of?
(A) The number of children born per woman during her entire reproductive life.
(B) The ratio of female children to male children.
(C) The number of young children relative to the number of women of childbearing age.
(D) The average age at which women have their first child.

30. Consider the following statements regarding the factors affecting the spatial distribution of population:
a. Favorable climates tend to support higher population densities.
b. The availability of fresh water is a critical factor for human settlement.
c. Industrial development and job opportunities act as strong pull factors.
d. Government policies like creating special economic zones can influence population concentration.
Which of the above statements are correct?
(A) a and c only
(B) b, c and d only
(C) a, b, and d only
(D) a, b, c, and d

31. In the context of population ageing, 'living arrangements' of the elderly refer to:
(A) Their household composition and whether they live alone, with a spouse, or with children.
(B) Their financial assets and income sources.
(C) Their participation in community and social activities.
(D) Their access to public transportation.

32. Consider the following statements:
Statement I: A country with a high proportion of its population in the 15-64 age group has the potential for a demographic dividend.
Statement II: The total dependency ratio in such a country would be relatively low.
(A) Statement I is correct, and Statement II is a direct consequence of Statement I.
(B) Statement I is correct, but Statement II is largely unrelated to the dividend.
(C) Both statements are correct but remain entirely independent of each other.
(D) Both Statement I and Statement II are considered incorrect in modern studies.

33. Which of the following is an example of a cultural factor affecting the age-sex structure?
(A) The level of industrialization in a country.
(B) The age at marriage prevalent in a society.

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(D) P-2, Q-1, R-4, S-3

51. Temporal changes in the size and distribution of population refer to:
(A) Changes that occur over different geographical spaces.
(B) Changes related to the age and sex structure only.
(C) Changes that happen over a period of time.
(D) Changes in population density at a single point in time.

52. Which of the following is a key health aspect related to population ageing?
(A) A decrease in the prevalence of chronic, non-communicable diseases.
(B) An increased demand for geriatric healthcare services.
(C) A significant reduction in healthcare expenditure per capita.
(D) An improvement in the physical mobility of the entire population.

53. Consider the following statements about global population distribution:
a. The majority of the world's population lives in the Northern Hemisphere.
b. Population is heavily concentrated on a small portion of the Earth's land area.
c. High-altitude regions, such as the Himalayas and the Andes, are densely populated.
d. The world's four major population clusters are in East Asia, South Asia, Europe, and North America.
e. Coastal areas tend to be more densely populated than continental interiors.
Which of the above statements are correct?
(A) a, b, c and d only
(B) b, c, d and e only
(C) a, b, d and e only
(D) a, c, d and e only

54. The dependency of the elderly on family support is influenced by:
(A) The availability of social security, their health status, and their living arrangements.
(B) Their past fertility rates.
(C) The national GDP growth rate.
(D) The country's foreign policy.

55. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): A declining sex ratio at birth is a cause for serious demographic concern in some parts of India.
Reason (R): This decline is often linked to practices of sex-selective abortion, reflecting a strong cultural preference for sons.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

56. The difference between the age and sex structure of developed and developing countries is primarily due to their different:
(A) Historical demographic transitions.
(B) Geographical locations.
(C) Political systems.
(D) Ethnic compositions.

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57. Identify the incorrect statement regarding factors affecting population distribution.
(A) Physical Factor - Availability of water
(B) Economic Factor - Industrial agglomeration
(C) Social Factor - Religious pilgrimage centers
(D) Demographic Factor - Annual rainfall

58. Ageing at the apex of the population pyramid refers to:
(A) A decline in birth rates.
(B) An increase in the proportion of the very old (e.g., 80+ years) among the elderly population.
(C) A youth bulge in the population.
(D) An increase in the working-age population.

59. In the context of India, demographic dividend is considered a window of opportunity because:
(A) It is a permanent and unchanging feature of the Indian population structure.
(B) It guarantees automatic economic growth regardless of national policy.
(C) It is a time-limited phase where the age structure is favorable for accelerated growth.
(D) It implies that the total population has completely stopped growing.

(C) It is used to calculate the crude birth rate.
(D) It directly measures the level of economic development.

43. Which statement regarding family support for the elderly in India is most accurate from a sociological perspective?
(A) Traditional family support systems for the elderly are strengthening due to modernization.
(B) The state has completely replaced the family as the primary caregiver for the elderly.
(C) There is no concept of family support for the elderly in modern India.
(D) Family support remains the primary source of care, though facing strains due to changes.

44. The Distribution-Dissimilarity Index is a tool used to measure:
(A) The speed of population growth.
(B) The level of residential segregation between two groups.
(C) The difference in age structure between two populations.
(D) The overall wealth inequality in a society.

45. Consider the following measures of population concentration or distribution:
a. Gini's Concentration Ratio
b. Rank-Size Rule
c. Total Fertility Rate
d. Distribution-Dissimilarity Index
Which of the above statements are correct?
(A) a and b only
(B) c and d only
(C) a, b, and d only
(D) a, b, c, and d

46. Consider the following statements:
Statement I: Developing countries tend to have a larger proportion of their population in the younger age groups (0-14 years) compared to developed countries.
Statement II: This is primarily a result of historically higher fertility rates in developing countries.
(A) Both Statement I and Statement II are correct, and Statement II is the correct explanation.
(B) Both Statement I and Statement II are correct, but Statement II is not the explanation.
(C) Statement I is correct, but Statement II is considered incorrect in this context.
(D) Statement I is incorrect, but Statement II is correct regarding historical fertility.

47. All of the following are economic factors affecting population distribution EXCEPT:
(A) Availability of jobs
(B) Kinship and ethnic ties
(C) Industrial development
(D) Transportation networks

48. Arrange the following measures of population distribution from measuring general dispersion to measuring specific inequality/hierarchy:
1. Population Density
2. Rank-Size Rule
3. Gini's Concentration Ratio
4. Lorenz Curve
Which of the following sequences is correct?
(A) 1, 2, 4, 3
(B) 2, 1, 3, 4
(C) 1, 4, 3, 2
(D) 4, 3, 1, 2

49. An Age-Sex Pyramid that is 'constrictive' or 'beehive-shaped' (narrower at the bottom) indicates:
(A) A young and rapidly growing population.
(B) A high birth rate and a high death rate.
(C) An elderly and shrinking population.
(D) A stable population with a recent baby boom.

50. Match List I (Dependency Ratio Type) with List II (Age Group in Numerator) and select the correct answer using the codes given below.
List I:
P. Child Dependency Ratio,
Q. Old-Age Dependency Ratio,
R. Total Dependency Ratio,
S. Working-Age Population (Denominator)
List II:
1. Population 65+,
2. Population 0-14 AND 65+,
3. Population 15-64,
4. Population 0-14
(A) P-1, Q-4, R-2, S-3
(B) P-4, Q-2, R-1, S-3
(C) P-4, Q-1, R-2, S-3

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with forecasting future demographic trends. These different scenarios allow planners and policymakers to consider a range of possible outcomes based on varying assumptions about how fertility, mortality, and migration rates might realistically change over time in different global regions.

285. (C) Differences in their specific assumptions about future fertility, mortality, and migration.
Variations in population projection outcomes from organizations like the United Nations, the World Bank, and the Government of India typically arise from differing assumptions. Each body may use slightly different data or professional judgments regarding future trajectories of fertility, mortality, and migration. These variations in underlying assumptions lead to different projected population sizes and age structures.

286. (D) Projections forecast future populations, while estimates determine population for a past or current date without a census.
The primary distinction between population projections and estimates lies in their temporal focus. Projections are forward-looking, forecasting future population trends and sizes based on specific growth assumptions. In contrast, population estimates aim to determine the population size for a current or past date when a formal census was not conducted, using various data to update counts.

287. (C) An inter-censual estimate
An estimate created for a date that falls between two completed census operations is known as an inter-censual estimate. Because this type of estimate is anchored by actual data from both an earlier and a later census, it is generally considered more accurate than other methods. It allows for retrospective adjustments based on the confirmed results of both censuses.

288. (B) A graphical illustration of population distribution by age and sex.
A population pyramid is a specialized graphical illustration used to display the distribution of a population by both age and sex. It typically consists of two back-to-back histograms, with age groups stacked vertically. This visual tool provides immediate insights into a population's demographic history, current structure, and potential future trends, such as rapid growth or aging.

289. (D) They can be adjusted using data from two censuses, anchoring the estimate.
Inter-censual estimates are widely regarded as more accurate than post-censual estimates because they utilize data from two completed censuses. This allows the estimate to be anchored at both ends of the time period. By adjusting for known population figures from both the beginning and the end of the interval, demographers can more precisely interpolate these intermediate values.

290. (A) Youngest at the bottom, oldest at the top.
On a standard population pyramid, age groups are arranged vertically. The youngest age cohorts are placed at the very bottom of the graph, and the groups progressively increase in age as they move toward the top. This stacking allows for a clear visualization of the relative size of different generations within the population's overall age and sex structure.

291. (C) A parameter is a characteristic of a population, while a statistic is a characteristic of a sample.
In statistics, a parameter is a numerical value that describes a specific characteristic of an entire population. Conversely, a statistic is a numerical value derived from a sample of that population. Statistical inference involves using these sample statistics to estimate the unknown population parameters, recognizing that a sample provides only an approximation of the entire group.

292. (A) Sampling distribution of the mean
The sampling distribution of the mean is a theoretical concept representing the distribution of all possible sample means that could be calculated from samples of a specific size drawn from a population. This distribution is central to statistical inference and typically follows a normal curve, centering on the true population mean according to the Central Limit Theorem.

293. (D) The variability or average distance of sample means from the true population mean.
The standard error of the mean is a measure used to quantify the variability of the sampling distribution. It represents the typical or average

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60. Consider the following statements regarding the age-sex pyramid:
a. It is a graphical representation of the age and sex composition of a population.
b. The left side typically shows the male population and the right side shows the female population.
c. A pyramid with a wide base indicates a high birth rate.
d. Asymmetries between the left and right sides can indicate sex-selective migration or mortality.
Which of the above statements are correct?
(A) a and c only
(B) a, b, and d only
(C) b, c, and d only
(D) a, b, c, and d

61. Which measure is most suitable for comparing the level of residential segregation between ethnic groups in a city?
(A) Distribution-Dissimilarity Index
(B) Rank-Size Rule
(C) Median Age
(D) Child-Women Ratio

62. Consider the following statements:
Statement I: The tempo of urbanization in India has accelerated significantly in recent decades.
Statement II: This acceleration is primarily driven by rural-to-urban migration and the reclassification of rural areas as urban.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

63. The Gini's concentration ratio is graphically represented by the:
(A) Age-Sex Pyramid
(B) Demographic Transition Model
(C) Lorenz Curve
(D) Population growth curve

64. Which of the following is NOT a measure of population ageing?
(A) Increase in the median age.
(B) Increase in the proportion of the population aged 60/65+.
(C) Increase in the old-age dependency ratio.
(D) Increase in the crude birth rate.

65. Match List I (State Trend) with List II (Demographic Characteristic) and select the correct answer using the codes given below.
List I:
P. Kerala,
Q. Bihar,
R. Punjab,
S. Uttar Pradesh
List II:
1. High density/fertility,
2. Advanced ageing,
3. High male out-migration,
4. Largest absolute population
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-1, R-3, S-4
(C) P-2, Q-4, R-3, S-1
(D) P-3, Q-1, R-2, S-4

66. A major social aspect of population ageing is the changing:
(A) Climatic conditions.
(B) Inter-generational relationships and family structures.
(C) National boundaries.
(D) Primary sector of the economy.

67. The concept of population concentration differs from population density in that:
(A) Concentration refers to the pattern of distribution, while density is a ratio of people to area.
(B) Density refers strictly to urban areas, while concentration refers strictly to rural zones.
(C) Concentration is an absolute number, while density is purely a relative statistical measure.
(D) There is no scientific difference; the terms are considered interchangeable in geography.

68. Consider the following statements regarding the consequences or emerging issues related to population ageing:
a. Increased pressure on pension and social security systems.
b. A growing need for geriatric healthcare and

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long-term care facilities.
c. Potential shortages in the labor force.
d. Changing patterns of family support and living arrangements.
e. A significant increase in the national fertility rate.

Which of the above statements are correct?
(A) a, b, c and d only
(B) b, c, d and e only
(C) a, c, d and e only
(D) a, b, and e only

69. According to the Rank-Size Rule, if the largest city in a country has a population of 10 million, the third-largest city would be expected to have a population of approximately:
(A) 5 million
(B) 10 million
(C) 3.33 million
(D) 2.5 million

70. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The age-sex structure of a population has significant relevance for its social and economic planning.
Reason (R): Different age groups have different needs, such as education for the young, jobs for the working-age population, and healthcare/ pensions for the elderly.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

71. A low Child-Women Ratio might suggest:
(A) A very high birth rate.
(B) A very young female population.
(C) An imbalanced sex ratio at birth.
(D) A low level of fertility or high child mortality.

72. One of the principal components of population ageing is:
(A) A long-term decline in fertility rates.
(B) A sustained increase in fertility rates.
(C) A decline in life expectancy at older ages.
(D) A high rate of emigration of older persons.

73. Which of the following correctly describes a trend of population change in India?
(A) The absolute size of the population has been decreasing since 2001.
(B) The rate of population growth has been steadily increasing since independence.
(C) The process of population ageing is becoming more prominent, especially in southern states.
(D) India has completed its demographic transition and has a stable population.

74. The concept of dependency in the context of the elderly primarily relates to their:
(A) Need for economic, social, and physical support.
(B) Desire to live independently.
(C) Voting behavior.
(D) Travel preferences.

75. Consider the following statements about the demographic dividend:
a. It is an automatic benefit that accrues to any country with a young population.
b. It is contingent upon investments in education, health, and job creation.
c. It is a finite period in a country's demographic transition.
d. India is currently in the phase of demographic dividend.

Which of the above statements are correct?
(A) a and b only
(B) b, c, and d only
(C) a, c, and d only
(D) a, b, c, and d

76. Consider the following statements:
Statement I: The Gini's concentration ratio and the Lorenz curve are tools used to analyze the equality of distribution.
Statement II: A Gini ratio of 0 represents perfect equality, while a ratio of 1 represents perfect inequality.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

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77. Which of the following is NOT a factor affecting the spatial distribution of the global population?
(A) Climate
(B) Topography
(C) The planet's rotational speed
(D) Soil fertility

78. The age structure of a population is best visualized using a(n):
(A) Lorenz Curve
(B) Pie Chart
(C) Line Graph
(D) Age-Sex Pyramid

79. An increasing median age in India's population signifies:
(A) The onset and progression of population ageing.
(B) A failure of public health policies.
(C) A rapid increase in the birth rate.
(D) A decrease in the total population.

80. Match List I (Factor) with List II (Influence on Structure) and select the correct answer using the codes given below.
List I:
P. High birth rate,
Q. War,
R. Male labor emigration,
S. Improved elderly healthcare
List II:
1. Increases older proportion,
2. Shortage of young men,
3. Male cohort deficit,
4. Broad pyramid base
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-3, R-2, S-1
(C) P-4, Q-2, R-3, S-1
(D) P-3, Q-4, R-1, S-2

81. A 'stationary' population pyramid, which is rectangular in shape, represents a population with:
(A) High birth and death rates.
(B) Low birth and death rates, and a stable size.
(C) Rapid growth.
(D) A high dependency ratio.

82. The Old Dependence Ratio specifically measures the ratio of:
(A) The population aged 65 and above to the working-age population.
(B) The entire non-working population to the working population.
(C) The population aged 0-14 to the working-age population.
(D) The population aged 80 and above to the population aged 65-79.

83. Consider the following statements regarding key aspects of India's population composition and change:
a. The national sex ratio has consistently been above 1000 females per 1000 males.
b. The southern states generally exhibit lower fertility rates and more advanced ageing than northern states.
c. The 'demographic dividend' is evenly distributed across all states of India.
d. There are significant inter-state variations in population density.
e. The tempo of urbanization has led to the growth of numerous large metropolitan cities.
Which of the above statements are correct?
(A) a, b, and c only
(B) b, d, and e only
(C) c, d, and e only
(D) a, c, and d only

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84. What is the primary difference between the sex ratio and the sex ratio at birth?
(A) They measure the same concept but utilize different population datasets.
(B) Sex ratio is for developing countries, while sex ratio at birth is for developed countries.
(C) There is no scientific difference; the terms are synonymous in all demography.
(D) Sex ratio refers to total population, while sex ratio at birth refers to newborns.

85. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Population ageing poses significant challenges to the financial sustainability of public pension systems.
Reason (R): As the proportion of elderly retirees increases relative to the working-age population, the contributor-to-beneficiary ratio declines.
(A) Both A and R are true and R is the correct explanation of A.

(C) a, b, and c only
(D) b, c, and d only

121. One of the major concerns regarding dependency for the elderly is:
(A) Their increasing participation in the workforce.
(B) Their reluctance to use modern technology.
(C) Financial dependency due to lack of adequate pensions or savings.
(D) The high birth rates among the elderly.

122. Consider the following statements:
Statement I: Population ageing is the result of demographic transition from high birth and death rates to low birth and death rates.
Statement II: The process leads to a shift in the age structure towards older ages.
(A) Statement I and Statement II are both true and Statement II is a direct consequence of Statement I.
(B) Statement I and Statement II are both true but are independent statements.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

123. The 'Child Dependency Ratio' is an indicator of the:
(A) Economic burden of the elderly population.
(B) Proportion of women in the reproductive age group.
(C) Burden on the working-age population to support the younger population.
(D) Total number of children born in a year.

124. Which of the following measures is used for analyzing spatial concentration of population?
(A) Human Development Index
(B) Life Expectancy at Birth
(C) Net Reproduction Rate
(D) Gini's concentration ratio

125. Match List I (Demographic Process) with List II (Primary Effect) and select the correct answer using the codes given below.
List I:
P. Decline in Fertility,
Q. Increase in Life Expectancy,
R. Rural-Urban Migration,
S. Sex-selective abortion
List II:
1. Increases tempo of urbanization,
2. Distorts sex ratio at birth,
3. Aging at the base,
4. Aging at the apex
(A) P-1, Q-2, R-4, S-3
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-1, R-2, S-4

126. A country can be said to be in the midst of its 'demographic dividend' phase when:
(A) The old-age dependency ratio is very high.
(B) The proportion of the working-age population (15-64) is at its peak.
(C) The child dependency ratio is very high.
(D) The total population begins to decline.

127. Which of the following does NOT directly affect the age structure of a population?
(A) Literacy rate
(B) Fertility rate
(C) Mortality rate
(D) Migration

128. Consider the following statements regarding the socio-economic aspects of ageing:
a. Ageing is purely a biological process with no social or economic dimensions.
b. Living arrangements are a key indicator of the social support available to the elderly.
c. The economic status of the elderly is often linked to their work history and access to social security.
d. Increasing longevity can lead to a higher prevalence of chronic illness and disability, impacting health systems.
e. In many societies, the burden of care for the elderly falls disproportionately on female family members.
Which of the above statements are correct?
(A) a, b, and c only
(B) b, c, d, and e only
(C) c, d, and e only
(D) a, d, and e only

129. The Lorenz Curve is a graphical method of showing:
(A) The age and sex distribution of a population.
(B) The degree of inequality in a frequency distribution.
(C) The relationship between city rank and city

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Q. Constrictive pyramid,
R. High old-age dependency,
S. High demographic dividend potential
List II:
1. Japan/Italy,
2. Sub-Saharan Africa,
3. Germany,
4. India/Brazil
(A) P-2, Q-3, R-1, S-4
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-3, R-1, S-2
(D) P-2, Q-1, R-4, S-3

96. Identify the incorrect statement regarding the demographic dividend.
(A) It arises when the share of the working-age population is larger than the dependent population.
(B) It is a permanent phenomenon once a country achieves it.
(C) To realize it, a country needs to invest in human capital.
(D) It is also referred to as a "demographic bonus" or "window of opportunity".

97. An emerging issue related to the elderly in many developing countries, including India, is the:
(A) Lack of elderly people in the population.
(B) Erosion of traditional multi-generational family support systems.
(C) Extremely high fertility rate among the elderly.
(D) Over-representation of the elderly in the high-tech workforce.

98. Consider the following measures of spatial distribution and concentration of population:
a. Distribution-dissimilarity index
b. Lorenz curve
c. Rank-size rule
d. Child-Women ratio
e. Gini's concentration ratio
Which of the above statements are correct?
(A) a, b, c, and d only
(B) b, c, d, and e only
(C) a, b, c, and e only
(D) a, c, d, and e only

99. The spatial distribution of population at a global scale is highly uneven, with dense concentrations in:
(A) Australia, Canada, and Siberia.
(B) The Amazon Basin, the Sahara Desert, and Antarctica.
(C) South Asia, East Asia, and Western Europe.
(D) The polar regions and high mountain peaks.

100. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The Child-Women Ratio can be used as a proxy for fertility in a population, especially when detailed birth registration data is unavailable.
Reason (R): It relates the number of young children (the outcome of recent births) to the number of women of reproductive age (the population at risk of giving birth).
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

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101. What does the term "sex structure" of a population refer to?
(A) The social roles assigned to men and women.
(B) The average age of men and women.
(C) The number of men compared to the number of women in a population.
(D) The number of children born to women.

102. Which of these is a measure used to show the degree of inequality in population distribution on a graph?
(A) Rank-Size Rule
(B) Lorenz Curve
(C) Age-Sex Pyramid
(D) Dissimilarity Index

103. The population structure of developed countries is often characterized by:
(A) A high child dependency ratio.
(B) A low median age.
(C) A rapidly expanding workforce.
(D) A higher proportion of older people.

104. Which of the following is NOT an emerging issue related to the elderly?
(A) High rates of youth unemployment.

(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

86. Which factor is a primary driver of the 'tempo of urbanization'?
(A) Natural increase within urban areas.
(B) Rural-to-urban migration.
(C) International migration.
(D) A decline in urban death rates.

87. A Gini's concentration ratio of 0.8 for a country's population distribution would suggest:
(A) A very even distribution of people across the land.
(B) A perfectly balanced urban hierarchy.
(C) A low level of urbanization.
(D) A very high degree of concentration in a few areas.

88. The study of living arrangements among the elderly is important for policymaking because it helps to:
(A) Determine the level and type of family and community support available.
(B) Predict future election outcomes.
(C) Calculate the exact Gini coefficient for the country.
(D) Estimate the total agricultural output.

89. A cultural factor that can significantly affect the age structure of a population is:
(A) The distribution of mineral resources.
(B) The presence of a major river system.
(C) The societal norms regarding the age of marriage and childbearing.
(D) The country's GDP per capita.

90. Consider the following statements about the sex ratio in a global context:
a. More boys are born than girls, leading to a sex ratio at birth of around 105.
b. Women tend to live longer than men, leading to a higher proportion of females at older ages.
c. Sex-selective migration for labor can significantly alter local sex ratios.
d. In the absence of interference, the overall sex ratio of a total population tends to be close to 100.

Which of the above statements are correct?
(A) a and b only
(B) a, b, and c only
(C) c and d only
(D) a, b, c, and d

91. Which of the following is the most significant demographic component of population ageing?
(A) The increase in the crude death rate.
(B) The increase in short-term migration.
(C) The decline in the age at marriage.
(D) The long-term decline in fertility rates.

92. Consider the following statements:
Statement I: The Distribution-Dissimilarity Index ranges from 0 to 1 (or 0 to 100).
Statement II: A value of 0 indicates complete segregation, while a value of 1 indicates perfect integration.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

93. The concept of family support for the elderly encompasses:
(A) Only limited and direct financial assistance from children.
(B) Government-provided pensions and universal healthcare systems.
(C) A broad range of support including financial, instrumental, and emotional help.
(D) Support provided by non-governmental organizations and charities only.

94. The shift in population distribution from rural to urban areas is a key aspect of:
(A) The decline in mortality.
(B) Population ageing.
(C) The change in sex ratio at birth.
(D) Spatial changes in population distribution.

95. Match List I (Population Characteristic) with List II (Country Type) and select the correct answer using the codes given below.
List I:
P. Wide-based pyramid,

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112. The two principal components that drive population ageing are:
(A) Rising fertility and rising mortality.
(B) Declining fertility and increasing life expectancy.
(C) High levels of immigration and emigration.
(D) Urbanization and industrialization.

113. Consider the following statements regarding the population dynamics in India:
a. The northern states have a higher fertility rate compared to the southern states.
b. Kerala is one of the most demographically advanced states in terms of ageing.
c. The demographic dividend is expected to last longer in the northern states than in the southern states.
d. The problem of adverse child sex ratio is more pronounced in some of the prosperous states.
e. All states in India are at the same stage of the demographic transition.
Which of the above statements are correct?
(A) a, b, c, and d only
(B) b, c, d, and e only
(C) a, c, d, and e only
(D) a, b, and e only

114. If a population pyramid shows a significant bulge in the 20-30 age group for males but not for females, it most likely indicates:
(A) Sex-selective in-migration of male laborers.
(B) A past baby boom 20-30 years ago.
(C) Higher female mortality in that age group.
(D) A government policy encouraging male births.

115. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The Total Dependency Ratio is a useful indicator of the economic burden on the working population.
Reason (R): It only considers the elderly population and ignores the child population.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

116. A key difference in the age structure of developed versus developing countries is the:
(A) Total absence of old people in developing countries.
(B) Shape of their respective age-sex pyramids.
(C) Lack of a working-age population in developed countries.
(D) Equal distribution of population across all age groups in developed countries.

117. Which of the following is the most appropriate example of a social factor influencing spatial population distribution?
(A) Presence of coal deposits.
(B) Historical patterns of settlement and cultural affinity.
(C) Government's industrial policy.
(D) Development of a new highway.

118. The "tempo of urbanization" is a concept that describes:
(A) The speed at which a country's population is becoming urban.
(B) The cultural life in cities.
(C) The architectural style of urban buildings.
(D) The absolute size of the largest city.

119. A high value for the Gini's concentration ratio (e.g., close to 1) applied to population distribution implies:
(A) Population is evenly spread across the territory.
(B) The country has a very low population density.
(C) Population is highly concentrated in a few locations.
(D) The rank-size rule is perfectly followed.

120. Consider the following statements about India's demographic scenario:
a. India is projected to become the world's most populous country.
b. The rate of population growth has shown a declining trend in recent decades.
c. There is considerable diversity in demographic indicators among the states.
d. The sex ratio has always been favorable to females throughout history.
Which of the above statements are correct?
(A) a and b only
(B) c and d only

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(B) Social isolation and loneliness.
(C) Need for age-friendly infrastructure.
(D) Increasing burden of chronic diseases.

105. Consider the following demographic indicators for a country:
a. High and rising median age.
b. Low and declining fertility rate.
c. High and rising old-age dependency ratio.
d. A constrictive or beehive-shaped age pyramid.
These indicators are collectively characteristic of a population experiencing:
(A) A youth bulge
(B) A baby boom
(C) Population ageing
(D) High natural increase

106. Consider the following statements:
Statement I: Population density provides a complete picture of the spatial distribution of population.
Statement II: It averages the population over the entire area, masking significant internal variations and concentrations.
(A) Both Statement I and Statement II are correct.
(B) Statement I is correct, but Statement II is incorrect.
(C) Statement I is incorrect, but Statement II is correct.
(D) Both Statement I and Statement II are incorrect.

107. Feminization of ageing refers to the phenomenon where:
(A) Elderly men increasingly adopt more feminine social traits and behaviors.
(B) Government social policies favor elderly women over elderly men.
(C) The total elderly population as a whole is becoming smaller over time.
(D) Women have a higher life expectancy, leading to more females in older age.

108. Arrange the following events in the typical demographic evolution of a country, leading to population ageing:
1. Decline in fertility rates begins.
2. Decline in mortality rates, especially infant and child mortality.
3. Life expectancy increases significantly, leading to more survivors into old age.
4. The proportion of the elderly population surpasses that of the young population.
Which of the following sequences is correct?
(A) 1, 2, 3, 4
(B) 2, 1, 3, 4
(C) 2, 3, 1, 4
(D) 3, 1, 2, 4

109. What is the primary focus of studying trends and pattern of ageing in India and States?
(A) To compare India's ageing pattern with that of ancient civilizations.
(B) To exclusively study the health problems of people above 90 years.
(C) To understand the variations in speed and intensity of ageing across states.
(D) To promote emigration of the elderly population from India.

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110. Match List I (Demographic Concept) with List II (Best Description) and select the correct answer using the codes given below.
List I:
P. Temporal Changes,
Q. Spatial Changes,
R. Age-Sex Structure,
S. Demographic Dividend
List II:
1. Composition by age and sex,
2. Alterations over time,
3. Economic benefit from workforce,
4. Shifts in location
(A) P-2, Q-4, R-1, S-3
(B) P-4, Q-2, R-1, S-3
(C) P-2, Q-1, R-4, S-3
(D) P-1, Q-2, R-3, S-4

111. Which of the following is a cause-effect relationship?
(A) Cause: Improved sanitation and healthcare; Effect: Decline in mortality rates.
(B) Cause: High population density; Effect: Low fertility rate.
(C) Cause: Rank-size rule; Effect: Gini coefficient.
(D) Cause: High old-age dependency; Effect: High child dependency.

size.
(D) The change in population size over time.

130. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The study of population composition is crucial for national planning.
Reason (R): All individuals in a population, regardless of age, sex, or economic status, have the exact same needs and make the same contributions.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

131. Which of the following best captures the meaning of spatial and temporal changes in population?
(A) The study of population only in one specific location.
(B) The study of population only at one point in time.
(C) Changes in population characteristics across space and over time.
(D) The biological characteristics of a population.

132. The 'sex ratio at birth' is considered an important indicator because:
(A) It reflects the overall health of the entire population.
(B) It is the primary determinant of economic growth.
(C) It is easily manipulated by government policy.
(D) Deviations from the natural norm can indicate social interventions like sex-selective practices.

133. If a country has a median age of 45, it indicates that:
(A) The population is very young and growing rapidly.
(B) Everyone in the country is exactly 45 years old.
(C) Half the population is older than 45 and half is younger.
(D) The life expectancy is 45 years.

134. Which factor most significantly contributes to the different shapes of age-sex pyramids between developed and developing countries?
(A) Differences in land area.
(B) Differences in historical fertility and mortality patterns.
(C) Differences in political ideology.
(D) Differences in dominant language.

135. Consider the following statements regarding the social factors affecting the age-sex structure:
a. Age at marriage
b. Status of women in society
c. Preference for sons
d. Religious beliefs about family size
Which of the above statements are correct?
(A) a and b only
(B) c and d only
(C) a, b, and c only
(D) a, b, c, and d

136. Consider the following statements:
Statement I: The rank-size rule describes an ideal-typical pattern of city sizes that is not always found in reality.
Statement II: Primate city distributions, where one city is overwhelmingly dominant, are a common deviation from the rank-size rule.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

137. Which of the following is an economic aspect of population ageing?
(A) The increased prevalence of widowhood.
(B) The change in grandparent-grandchild relationships.
(C) The pressure on public finance due to pensions and healthcare costs.
(D) The increase in single-person households among the elderly.

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138. The measure that calculates the number of children aged 0-4 per 1000 women of childbearing age (usually 15-49) is the:
(A) Total Fertility Rate
(B) Crude Birth Rate
(C) Child Dependency Ratio
(D) Child-Women Ratio

139. In India, the spatial pattern of population ageing shows that:
(A) The southern states like Kerala and Tamil Nadu are in a more advanced stage of ageing.
(B) All states are ageing at the same uniform rate.
(C) The northern "BIMARU" states are ageing faster than the southern states.
(D) Population ageing is not yet observable in any Indian state.

140. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): In many developing countries, family support is the most important source of security for the elderly.
Reason (R): Formal social security systems for the elderly are often underdeveloped or have limited coverage in these countries.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

141. The Distribution-Dissimilarity Index is most analogous in its mathematical concept to the:
(A) Rank-Size Rule
(B) Gini's Concentration Ratio
(C) Total Dependency Ratio
(D) Median Age calculation

142. A major focus of studying the composition of India's population is understanding its:
(A) Vast diversity in terms of demographic, social, and economic characteristics.
(B) Complete homogeneity across all states and regions.
(C) Historical diplomatic relations.
(D) Geological formations.

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143. Which of the following situations would lead to the largest demographic dividend?
(A) A high child dependency ratio and a high old-age dependency ratio.
(B) A high child dependency ratio and a low old-age dependency ratio.
(C) A low child dependency ratio and a low old-age dependency ratio.
(D) A low child dependency ratio and a high old-age dependency ratio.

144. 'Ageing at the base' of a population pyramid refers to:
(A) The increase in the number of older persons.
(B) The increase in the working-age population.
(C) The high mortality rate among children.
(D) The effect of declining fertility, which narrows the base of the pyramid.

145. Consider the following statements about population density:
a. It is a crude measure as it assumes even distribution.
b. It is calculated by dividing total area by total population.
c. It is a measure of concentration.
d. It is usually expressed as persons per square kilometer.
Which of the above statements are correct?
(A) a, b, and c only
(B) a, c, and d only
(C) b and d only
(D) a, b, c, and d

146. Consider the following statements:
Statement I: The sex ratio of a population can be affected by sex-selective migration.
Statement II: Regions that experience large-scale out-migration of male laborers may exhibit a higher sex ratio (more females to males).
(A) Both Statement I and Statement II are correct and Statement II is an example of Statement I.
(B) Both Statement I and Statement II are correct but are unrelated.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

147. Which of the following is NOT one of the three basic components of population ageing?
(A) Decline in fertility
(B) Increase in urbanization
(C) Decline in mortality
(D) Role of migration

148. What is a key relevance of the age-sex structure for a country's economy?
(A) It influences the size and characteristics of the labor force.
(B) It determines the country's climate.
(C) It dictates the country's official language.
(D) It has no relevance to the economy.

149. An increasing Old-Age Dependency Ratio in India implies:
(A) A growing number of children to be supported by the workforce.
(B) A decrease in the total population of India.
(C) A growing proportion of elderly people to be supported by the working-age population.
(D) An improvement in the child sex ratio.

150. Arrange the following indicators in a logical sequence of analysis for population concentration:
1. Calculate Population Density for different administrative units.
2. Construct a Lorenz Curve based on cumulative proportion of population and area.
3. Calculate the Gini's Concentration Ratio from the Lorenz Curve.
4. Rank administrative units by their population density.

Which of the following sequences is correct?
(A) 1, 4, 2, 3
(B) 4, 1, 3, 2
(C) 2, 3, 1, 4
(D) 1, 2, 4, 3

151. Which factor affects the sex structure but not necessarily the age structure of a population?
(A) A decline in the overall birth rate.
(B) A general increase in life expectancy for both sexes.
(C) Sex-selective abortion.
(D) A famine affecting all age groups equally.

152. The term "family support" for the elderly can be categorized into all of the following types EXCEPT:
(A) Financial support
(B) Instrumental support (help with daily tasks)
(C) Emotional support
(D) Political support (lobbying for legislation)

153. A sudden indentation or "bite" in an age-sex pyramid for a particular age cohort might represent:
(A) A period of exceptionally high fertility.
(B) A statistical error in data collection.
(C) A government policy promoting smaller families.
(D) A historical event causing high mortality or emigration, such as a war or famine.

154. The concept that the population of the nth largest city is 1/n the population of the largest city is known as:
(A) Rank-Size Rule
(B) Gini's Ratio
(C) Central Place Theory
(D) Dependency Ratio

155. Which of the following statements about global population distribution is INCORRECT?
(A) Population is unevenly distributed.
(B) About 90% of the world's population lives in the Northern Hemisphere.
(C) Population density is highest in the interiors of large continents like Africa and Australia.
(D) Large portions of the Earth's surface, such as deserts and polar regions, are sparsely populated.

156. Consider the following statements:
Statement I: The demographic dividend is a guaranteed outcome for any country with a large youth population.
Statement II: Realizing the dividend requires enabling policies in health, education, and governance to create jobs and utilize the potential of the workforce.
(A) Both Statement I and Statement II are correct.
(B) Statement I is incorrect, but Statement II is correct.
(C) Statement I is correct, but Statement II is incorrect.

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deal with the elderly.
(D) The financial assets owned by the elderly.

215. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The sex ratio among the elderly (e.g., 65+) is typically skewed towards females.
Reason (R): In most societies, female life expectancy is higher than male life expectancy.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

216. The relevance of age-sex structure in population dynamics is that it:
(A) Is static and never changes.
(B) Determines the future momentum of population growth.
(C) Is irrelevant for economic planning.
(D) Only affects the sex ratio, not population growth.

217. Identify the correct pair.
(A) Rank-Size Rule - Measures inequality
(B) Lorenz Curve - Shows city hierarchy
(C) Age-Sex Pyramid - Visualizes age/sex composition
(D) Dependency Ratio - Measures fertility

218. An increasing trend in the old-age dependency ratio in India would indicate:
(A) An increasing burden on the working-age population to support a growing elderly population.
(B) A growing youth population.
(C) A successful family planning program from past decades.
(D) A decline in life expectancy.

219. One of the primary causes of temporal changes in population size at the global level is the:
(A) Movement of people between continents.
(B) Reclassification of urban and rural areas.
(C) Political recognition of new countries.
(D) Changing relationship between birth rates and death rates.

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220. Consider the following definitions related to population demographics:
a. Median Age: The age at which 50% of the population is older and 50% is younger.
b. Sex Ratio: Number of females per 1000 males.
c. Demographic Dividend: Economic benefit from a low dependency ratio.
d. Population Ageing: An increase in the absolute number of elderly people only.
Which of the above statements are correct?
(A) a and b only
(B) a, b, and c only
(C) c and d only
(D) a, b, c, and d

221. Which tool is specifically designed to measure the degree of inequality in a spatial distribution, such as population across districts?
(A) Age-Sex Pyramid
(B) Total Dependency Ratio
(C) Gini's Concentration Ratio
(D) Child-Women Ratio

222. Consider the following statements:
Statement I: The composition of India's population varies significantly from one state to another.
Statement II: States like Kerala have demographic indicators similar to developed countries, while states like Bihar have indicators typical of an earlier stage of transition.
(A) Both Statement I and Statement II are correct, and Statement II provides an example for Statement I.
(B) Both Statement I and Statement II are correct, but are unrelated.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

223. What is the main difference between Child Dependency Ratio and Old-Age Dependency Ratio?
(A) The denominator age group.
(B) The method of calculation.
(C) The numerator age group.
(D) The geographical region where they are applied.

167. An important health aspect associated with population ageing is the shift in disease patterns towards:
(A) Infectious and communicable diseases.
(B) Diseases primarily affecting infants and children.
(C) Nutritional deficiencies related to rapid growth.
(D) Chronic, degenerative, and non-communicable diseases.

168. Which concept is used to analyze the hierarchical relationship between cities in a region based on their population size?
(A) Rank-Size Rule
(B) Gini's Concentration Ratio
(C) Lorenz Curve
(D) Dependency Ratio

169. What is the most direct consequence of a sustained period of below-replacement-level fertility?
(A) A rapid increase in the child dependency ratio.
(B) A significant youth bulge.
(C) A shrinking of the younger age cohorts and, eventually, population ageing.
(D) An immediate increase in the overall population growth rate.

170. Which of the following scenarios best illustrates a 'temporal change' in population distribution in India?
(A) Analyzing the increase in the percentage of India's urban population from 1951 to 2011.
(B) Comparing the population density of Mumbai with that of Chennai in 2011.
(C) Tracking the growth of Delhi's population over 50 years.
(D) Analyzing the change in India's birth rate from 1980 to 2020.

171. The relevance of age-sex structure in population dynamics is LEAST related to:
(A) Projecting future population size.
(B) Assessing the potential for demographic dividend.
(C) Planning for social services like schools and hospitals.
(D) Determining the national language of a country.

172. The difference in life expectancy between males and females is a key factor influencing the:
(A) Child-Women Ratio.
(B) Sex ratio in the older age groups.
(C) Crude birth rate.
(D) Tempo of urbanization.

173. The primary data required to construct a Lorenz Curve for population distribution analysis are:
(A) Age and sex of the population.
(B) Birth and death rates for a decade.
(C) Cumulative percentage of population and cumulative percentage of area.
(D) Rank and size of cities in a country.

174. State X has a high out-migration of its male working-age population to other states for employment. What is the most likely impact on the sex ratio of State X's resident population?
(A) The sex ratio will become skewed towards males (fewer females per 1000 males).
(B) The sex ratio will remain perfectly balanced at 1000.
(C) The sex ratio at birth will be directly affected.
(D) The sex ratio will become skewed towards females (more females per 1000 males).

175. Consider the following statements regarding the factors affecting the spatial distribution and density of population:
a. Physical factors like climate, terrain, and water availability are fundamental.
b. Economic factors like industrialization and employment create pull factors for migration.
c. Social factors like cultural or religious centers can create pockets of high density.
d. Political factors, including stability and government policies, can encourage or discourage settlement.
Which of the above statements are correct?
(A) a and b only
(B) a, b, and c only
(C) b, c, and d only
(D) a, b, c, and d

176. Consider the following statements:
Statement I: Population ageing is characterized by an increase in the median age.
Statement II: Median age is the age that divides the population into two numerically equal

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(D) Both Statement I and Statement II are incorrect.

157. The primary reason for the different age structures in developed and developing nations is their different stages in the:
(A) Political cycle.
(B) Economic business cycle.
(C) Agricultural revolution.
(D) Demographic transition.

158. In population studies, the Lorenz curve visually represents the:
(A) Number of males for every 100 females.
(B) Cumulative percentage of population against cumulative area or income.
(C) Population growth rate over time.
(D) Distribution of population by age and sex.

159. A key 'emerging issue' for the elderly in the context of urbanization and migration is:
(A) The increase of agricultural opportunities.
(B) The decrease in the cost of living in cities.
(C) The potential for loneliness and isolation as children move away for work.
(D) The improved air quality in urban centers.

160. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Population ageing is often described as a triumph of public health and development.
Reason (R): It is a consequence of increased longevity and reduced fertility, which are markers of socio-economic progress.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

161. The "greying" of a population refers to:
(A) An increase in the proportion of the young population.
(B) The process of population ageing.
(C) A period of rapid population growth.
(D) A decline in the overall population size.

162. A key cultural factor influencing India's population composition, particularly the sex ratio, is:
(A) The preference for male offspring.
(B) The diversity of cuisines.
(C) The popularity of cinema.
(D) The variety of traditional dances.

163. The Total Dependency Ratio is the sum of:
(A) Crude Birth Rate and Crude Death Rate.
(B) In-migration and Out-migration rates.
(C) Child Dependency Ratio and Old-Age Dependency Ratio.
(D) Male population and Female population.

164. The study of population composition involves analyzing the population based on characteristics like:
(A) Only the total number of people.
(B) Only the geographical boundaries of a country.
(C) Only the historical growth of the population.
(D) Age, sex, marital status, and economic activity.

165. Which of the following statements about the Gini's Concentration Ratio is INCORRECT?
(A) It is derived from the Lorenz curve.
(B) A value of 0 indicates perfect equality.
(C) It directly measures the population growth rate.
(D) A value of 1 indicates perfect inequality.

166. Consider the following statements:
Statement I: The age-sex pyramid provides a snapshot of a population's demographic history.
Statement II: Bulges or indentations in the pyramid correspond to past "baby booms," wars, or migrations.
(A) Both Statement I and Statement II are correct, and Statement II explains Statement I.
(B) Both Statement I and Statement II are correct, but they are independent.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

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186. Consider the following statements:
Statement I: The Distribution-Dissimilarity Index measures the percentage of a group's population that would have to move to achieve an even residential distribution.
Statement II: A higher index value indicates greater segregation.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

187. Family support and dependency are key concepts when studying the:
(A) Tempo of urbanization.
(B) Rank-size rule.
(C) Calculation of the Gini's ratio.
(D) Social and economic aspects of ageing.

188. In the context of India, which group of states is generally considered to be in a more advanced stage of population ageing?
(A) Bihar, Uttar Pradesh, Rajasthan
(B) Kerala, Tamil Nadu, Goa
(C) Punjab, Haryana, Gujarat
(D) Arunachal Pradesh, Mizoram, Nagaland

189. A country's age-sex structure is NOT directly relevant for planning which of the following?
(A) Educational facilities.
(B) Healthcare services.
(C) International diplomatic protocols.
(D) Pension schemes.

190. Consider the following statements about the components of population ageing:
a. A decline in fertility is the most powerful driver of population ageing.
b. An increase in life expectancy contributes to ageing by allowing more people to survive to old age.
c. International migration can influence ageing, often by adding younger individuals to the population.
d. Population ageing means the number of young people is increasing.
Which of the above statements are correct?
(A) a and b only
(B) a, b, and c only
(C) c and d only
(D) a, b, c, and d

191. A high Child-Women ratio in a population generally suggests:
(A) A recent history of high fertility.
(B) A low birth rate.
(C) A very old population structure.
(D) A high rate of female emigration.

192. Which of the following represents a spatial (as opposed to temporal) comparison of population?
(A) Comparing India's population in 1951 and 2011.
(B) Comparing the population density of Mumbai with that of Chennai in 2011.
(C) Tracking the growth of Delhi's population over 50 years.
(D) Analyzing the change in India's birth rate from 1980 to 2020.

193. The primary utility of the 'sex ratio at birth' indicator is to:
(A) Project the total size of the future population.
(B) Assess the prevalence of pre-natal sex selection.
(C) Calculate the total dependency ratio.
(D) Measure the level of urbanization.

194. Which of the following is the most significant factor affecting the spatial distribution of population at a local scale?
(A) Availability of housing, employment, and amenities.
(B) The Earth's rotation.
(C) Continental drift.
(D) The phase of the moon.

195. Match List I (Concept) with List II (Related Idea) and select the correct answer using the codes given below.
List I:
P. Demographic Dividend,
Q. Population Ageing,
R. Lorenz Curve,
S. Sex Ratio
List II:
1. Gender imbalance,
2. Window of opportunity,

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a. The sustainability of pension and healthcare systems.
b. Changing family structures and support systems.
c. The need for barrier-free environments and age-friendly cities.
d. An increase in the national high school graduation rate.

Which of the above statements are correct?
(A) a and b only
(B) a, b, and c only
(C) c and d only
(D) a, b, c, and d

236. Consider the following statements:
Statement I: The spatial distribution of population refers to where people are located.
Statement II: Population density is a measure of that distribution.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

237. Which of the following best describes the global perspective on population distribution?
(A) People are evenly spread across the globe.
(B) The Southern Hemisphere is more populous than the Northern Hemisphere.
(C) Population is highly concentrated in a few regions, leaving other large areas sparsely populated.
(D) Deserts and polar regions have the highest population densities.

238. An Age-Sex Pyramid with a bulge in the middle-age groups and a narrow base is typical of a country with:
(A) A recent baby boom.
(B) A long history of high fertility.
(C) High infant mortality.
(D) A recent and rapid decline in fertility.

239. The most significant 'emerging issue' related to the Indian elderly is the combination of increasing longevity with:
(A) Erosion of traditional family support and lack of universal social security.
(B) A strengthening of traditional joint family systems.
(C) A decrease in healthcare costs.
(D) Abundant, well-paying job opportunities for seniors.

240. Match List I (Measure) with List II (Type of Information) and select the correct answer using the codes given below.
List I:
P. Age-Sex Pyramid,
Q. Lorenz Curve,
R. Dependency Ratio,
S. Sex Ratio
List II:
1. Economic burden,
2. Gender composition,
3. Distributional inequality,
4. Age-sex composition
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-3, R-1, S-2
(C) P-4, Q-1, R-3, S-2
(D) P-3, Q-4, R-2, S-1

241. The Distribution-Dissimilarity Index, Gini's Concentration Ratio, and the Lorenz Curve are all tools to analyze:
(A) The age structure of a population.
(B) The patterns of inequality in distribution.
(C) The future growth rate of a population.
(D) The historical evolution of fertility.

242. What is the fundamental reason for the emergence of a 'demographic dividend'?
(A) A decline in mortality followed by a later decline in fertility.
(B) A simultaneous decline in fertility and mortality.
(C) An increase in fertility rates.
(D) A government decree to increase the workforce.

243. Which of the following is a key concept of population ageing?
(A) It is a problem that affects only poor countries.
(B) It is a temporary phenomenon that will soon reverse itself globally.
(C) It represents an increase in the proportion of older persons, not just their absolute

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(B) Total Dependency Ratio
(C) Child Dependency Ratio
(D) Child-Women Ratio

205. The concept of 'dependency' for the elderly is multifaceted and includes all the following EXCEPT:
(A) Demographic dependency on high birth rates.
(B) Economic dependency on pensions or family.
(C) Physical dependency for activities of daily living.
(D) Emotional dependency on family and community.

206. In a developing country, the age-sex pyramid typically has a:
(A) Wide base and a narrow top.
(B) Narrow base and a wide top.
(C) Rectangular shape throughout.
(D) Narrow base and a narrow top.

207. A primary factor affecting the spatial concentration of population in coastal zones globally is:
(A) The prevalence of tsunamis.
(B) The high cost of living.
(C) The opportunities for trade, fishing, and commerce.
(D) The absence of fresh water.

208. The 'demographic dividend' is contingent upon:
(A) A state of a rapidly ageing population with high mortality rates.
(B) A sharp and sudden increase in national crude fertility rates.
(C) The complete and permanent cessation of all forms of migration.
(D) The ability of the economy to absorb and productively employ the workforce.

209. Which statement is INCORRECT regarding population ageing?
(A) It is an increase in the proportion of older people.
(B) It leads to a lower median age for the population.
(C) It is driven by lower fertility and higher life expectancy.
(D) It presents challenges for social security systems.

210. Consider the following statements about the dependency ratio:
a. It compares the dependent population (young and old) to the productive population.
b. A low dependency ratio is generally favorable for economic growth.
c. Population ageing leads to an increase in the old-age dependency ratio.
d. A very high child dependency ratio is typical of a country in the early stages of demographic transition.
Which of the above statements are correct?
(A) a and b only
(B) c and d only
(C) a, b, and c only
(D) a, b, c, and d

211. What does the 'median age' of a population signify?
(A) The age at which most deaths occur.
(B) The average age of the population.
(C) The age that divides the population into two equal halves.
(D) The mandatory retirement age.

212. Which of the following is a direct measure of population concentration?
(A) Crude death rate
(B) Population density
(C) Total fertility rate
(D) Life expectancy

213. A region experiences a massive influx of young, male construction workers for a large infrastructure project. This event will most directly and immediately affect the region's:
(A) Total fertility rate.
(B) Old-age dependency ratio.
(C) Child-women ratio.
(D) Age-sex structure.

214. The components of population ageing can be summarized as:
(A) The processes that lead to an older population structure.
(B) The various parts of a city where elderly people live.
(C) The different government departments that

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halves.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

177. An 'Age-Sex Pyramid' is a useful tool for analyzing all of the following EXCEPT:
(A) The effects of past migration or wars on specific cohorts.
(B) The Gini's concentration ratio of a population.
(C) The dependency load of a population.
(D) The future growth momentum of a population.

178. From a global perspective, a significant temporal change in population size over the past two centuries has been:
(A) A period of unprecedentedly rapid growth.
(B) A consistent and steady decline.
(C) A long period of complete stability with no growth.
(D) Cyclical fluctuations with no net change.

179. The demographic dividend is best described as:
(A) A government payment to families for having children.
(B) The total number of dependents in a population.
(C) A potential economic benefit arising from a favorable age structure.
(D) The difference between birth rates and death rates.

180. Match List I (Measure) with List II (What it Indicates) and select the correct answer using the codes given below.
List I:
P. Gini's Ratio,
Q. Dependency Ratio,
R. Sex Ratio,
S. Median Age
List II:
1. Male-female balance,
2. Age distribution central point,
3. Productive economic burden,
4. Spatial distribution inequality
(A) P-4, Q-3, R-1, S-2
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-1, R-3, S-2
(D) P-1, Q-3, R-4, S-2

181. A key economic factor that has shaped India's population distribution is the:
(A) Caste system.
(B) Linguistic reorganization of states.
(C) Green Revolution, which concentrated prosperity and population in certain regions.
(D) Monsoon wind pattern.

182. A population with a high proportion of people over 65 and a small proportion of people under 15 would have:
(A) A low child dependency ratio and a high old-age dependency ratio.
(B) A high child dependency ratio and a low old-age dependency ratio.
(C) A high child dependency ratio and a high old-age dependency ratio.
(D) A low child dependency ratio and a low old-age dependency ratio.

183. The study of living arrangements of the elderly is crucial for understanding:
(A) The impact of climate change.
(B) The nation's foreign policy.
(C) The success of the manufacturing sector.
(D) Their social integration and potential vulnerability.

184. The difference between the age structure of a developed country and a developing country is often that the developed country has a more:
(A) Rectangular or columnar structure.
(B) Pyramidal structure.
(C) Expansive structure.
(D) Youthful structure.

185. Which of the following is the best definition of population composition?
(A) The total number of people in an area.
(B) The growth rate of the population over time.
(C) The measurable characteristics of a population, such as age, sex, and ethnicity.
(D) The movement of people from one place to another.

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224. Which of the following is NOT an economic factor affecting the spatial distribution of population?
(A) Location of mineral resources.
(B) Development of transport and communication.
(C) Process of industrialization.
(D) Traditional attachment to an ancestral village.

225. Which of the following is NOT a measure of population ageing?
(A) The proportion of the population aged 60+.
(B) The child-women ratio.
(C) The median age of the population.
(D) The old-age dependency ratio.

226. The shift from a young age structure to an old age structure is a key feature of:
(A) The demographic transition.
(B) The Malthusian trap.
(C) The process of urbanization.
(D) The rank-size rule.

227. An analysis of the 'living arrangements' of India's elderly would most likely focus on:
(A) The architectural styles of their homes.
(B) Their preferred holiday destinations.
(C) The proportion living alone, with a spouse, or in multi-generational households.
(D) The brand of consumer goods they purchase.

228. The concept of "tempo of urbanization" is important for planners because it helps in:
(A) Preserving ancient monuments.
(B) Understanding rural farming techniques.
(C) Regulating international trade.
(D) Anticipating future demand for urban infrastructure and services.

229. A key social aspect of ageing is the change in:
(A) The earth's magnetic field.
(B) The rate of industrial production.
(C) Roles and status within the family and society.
(D) The national Gini coefficient.

230. Consider the following statements regarding the Rank-Size Rule and related concepts:
a. It posits that the population of a city is inversely proportional to its rank.
b. A country's urban system perfectly follows the rule if the second largest city is exactly half the size of the largest.
c. A primate city distribution is a major deviation from the Rank-Size Rule.
d. The rule is a law of physics and is never violated.
e. It is a tool for analyzing the hierarchy within an urban system.
Which of the above statements are correct?
(A) a, b, c and e only
(B) b, c, d and e only
(C) a, c and d only
(D) a, b and d only

231. The primary cause for the difference in the shape of population pyramids between developed and developing nations is:
(A) Different levels of fertility.
(B) Different land areas.
(C) Different forms of government.
(D) Different climatic zones.

232. 'Demographic dividend' is a concept that links:
(A) Population age structure to economic growth potential.
(B) Urban population to rural population.
(C) Male population to female population.
(D) Birth rates to death rates.

233. The 'Child-Women Ratio' is often used as a substitute for the fertility rate in historical studies because:
(A) It provides a more accurate measure of mortality.
(B) It directly measures migration patterns.
(C) It is easier to count existing children and women from a census than to register all births.
(D) It is a better indicator of economic development.

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234. In India, the states with a higher 'tempo of urbanization' are often those experiencing:
(A) Agricultural stagnation.
(B) A decline in overall population.
(C) A resurgence of traditional crafts.
(D) Rapid industrial and service sector growth.

235. Consider the following statements regarding the social or economic aspects of population ageing:

3. Increasing median age,
4. Inequality graphical measure

(A) P-2, Q-3, R-4, S-1
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-4, R-1, S-2
(D) P-2, Q-1, R-4, S-3

196. The relevance of age-sex structure in population dynamics lies in its strong influence on:
(A) The number of languages spoken.
(B) The potential for future population growth and the demand for social services.
(C) The political boundaries of a nation.
(D) The predominant type of climate.

197. Which statement about the age structure of India's population is correct?
(A) India has one of the oldest populations in the world.
(B) The age structure is uniform across all states.
(C) The proportion of the working-age population is declining rapidly.
(D) India has a relatively young population, which provides the basis for the demographic dividend.

198. The concepts of 'Gini's concentration ratio' and 'Lorenz curve' are used in population geography to analyze:
(A) The degree of unevenness in the spatial distribution of population.
(B) The age composition of the population.
(C) The rate of natural increase of the population.
(D) The future population projections.

199. An 'emerging issue' for the elderly in a globalized world is:
(A) The reduction in life expectancy.
(B) The lack of communication technologies.
(C) The impact of migration of younger family members, leading to care deficits.
(D) The decreasing prevalence of chronic diseases.

200. Arrange the following demographic events in a plausible chronological sequence for a country undergoing transition:
1. The 'demographic dividend' window opens as the working-age population swells.
2. Fertility rates decline sharply.
3. Mortality rates, especially for infants, begin to fall.
4. Population ageing becomes a major concern as the working-age cohort grows old.

Which of the following sequences is correct?
(A) 3, 2, 1, 4
(B) 2, 3, 1, 4
(C) 1, 3, 2, 4
(D) 3, 1, 4, 2

201. Which of the following is the best example of a "social factor" affecting age-sex structure?
(A) Development of new medical technologies.
(B) The discovery of new mineral resources.
(C) A government program for road construction.
(D) Societal norms regarding the ideal age for marriage.

202. Consider the following statements:
Statement I: A country with a primate city distribution violates the Rank-Size Rule.
Statement II: In a primate city system, the largest city is more than twice as large as the next largest city, creating an imbalance in the urban hierarchy.
(A) Both Statement I and Statement II are correct, and Statement II explains Statement I.
(B) Both Statement I and Statement II are correct, but are independent.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

203. The study of trends in population ageing within India's states is important because:
(A) It confirms that all of India is demographically uniform.
(B) It is required for participation in international sporting events.
(C) It highlights the diverse policy needs regarding job creation and elderly care.
(D) It proves that population ageing is not a real phenomenon.

204. Which of these demographic indicators is a measure of fertility, not dependency?
(A) Old-Age Dependency Ratio

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number.
(D) It is caused by an increase in birth rates.

244. The sex structure of the population in developed countries at older ages (75+) is characterized by:
(A) A significant surplus of males.
(B) A near-perfect balance of males and females.
(C) A complete absence of males.
(D) A significant surplus of females.

245. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The spatial distribution of India's population is highly uneven.
Reason (R): This is due to a combination of varied physical factors and socio-economic factors.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

246. In population dynamics, 'tempo' refers to the:
(A) Absolute level of a phenomenon.
(B) Timing or speed of change of a demographic phenomenon.
(C) Geographic location of a phenomenon.
(D) Cultural significance of a phenomenon.

247. The relevance of studying India's population composition is primarily for:
(A) Creating more complex census questionnaires.
(B) Winning international demographic competitions.
(C) Promoting a single national culture.
(D) Effective and targeted socio-economic planning and policy-making.

248. The health aspects of ageing are a major concern because:
(A) The elderly population tends to have a higher prevalence of chronic diseases, requiring long-term and costly care.
(B) Elderly people are less likely to vote.
(C) Elderly people do not contribute to the economy.
(D) The number of elderly people is decreasing worldwide.

249. If city 'A' is the largest city in a country, the Rank-Size Rule predicts that the 4th largest city will have:
(A) Half the population of city 'A'.
(B) One-third the population of city 'A'.
(C) One-fourth the population of city 'A'.
(D) The same population as city 'A'.

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250. The single most important factor driving population ageing at a global scale is:
(A) The decline in fertility rates.
(B) The increase in global migration.
(C) The process of urbanization.
(D) The change in mortality rates at younger ages.

Direction : Please read the following source carefully.

The study of population dynamics is fundamentally concerned with the spatial and temporal changes in the size and distribution of human populations. A global perspective reveals significant shifts over time, with unprecedented growth in the last two centuries, though this growth has been unevenly distributed. While some regions, particularly in developed countries, are experiencing stabilization or even decline, others, primarily in developing nations, continue to expand. Focusing on India, the temporal changes are marked by a transition from high birth and death rates to a phase of rapidly declining death rates followed by a slower decline in birth rates, leading to a population explosion in the mid-20th century. Spatially, India's population distribution is highly varied, with dense concentrations in the fertile plains of the Ganges and coastal areas, contrasting with sparse populations in the Himalayan region and arid western states. Understanding these patterns requires examining the factors affecting spatial distribution, density, and concentration, which operate at global, national, and regional scales. These changes in size and distribution are not merely numerical but have profound implications for resource allocation, environmental management, and socio-economic planning, making their continuous analysis crucial for sustainable development.

Based on the above source, attempt the following

data. Together, these indicators provide a nuanced understanding of a population's structure, potential, and underlying social dynamics.

Based on the above source, attempt the following five questions.

286. The 'demographic dividend' is described in the passage as the potential for economic growth resulting from:
(A) a high proportion of elderly people in the population.
(B) an equal number of working-age and non-working-age people.
(C) a very high birth rate and a youthful population.
(D) a larger share of the working-age population compared to the dependent population.

287. What is the primary distinction between the Sex-ratio and the Sex-ratio at birth as explained in the passage?
(A) The Sex-ratio measures males per 1000 females, while the Sex-ratio at birth measures the reverse.
(B) There is no significant distinction; the terms are used interchangeably.
(C) The Sex-ratio reflects the overall gender balance, while the Sex-ratio at birth specifically relates to births.
(D) The Sex-ratio is a fertility measure, while the Sex-ratio at birth is a mortality measure.

288. According to the source, the Child-Women ratio is a useful measure because it:
(A) directly measures the mortality rate of children.
(B) can serve as a proxy for fertility when birth data is unreliable.
(C) indicates the number of women in the total population.
(D) reflects the overall gender balance in society.

289. A low Sex-ratio (fewer females per 1000 males) in a society is suggested by the passage to be an indicator of:
(A) a high rate of female literacy.
(B) the country's economic growth rate.
(C) a period of demographic dividend.
(D) the social status of women.

290. The passage implies that for a country to benefit from its demographic dividend, which of the following is necessary?
(A) The implementation of appropriate social and economic policies.
(B) A higher proportion of dependents.
(C) A decrease in the size of the working-age population.
(D) The absence of reliable demographic data.

Direction : Please read the following source carefully.

To further refine the analysis of a population's age structure, demographers utilize specific indicators such as Median Age, the Age-Sex Pyramid, and Dependency Ratios. The Median Age is the age that divides a population into two numerically equal halves—one half is younger, and the other half is older. It is a single index that summarises the age distribution of a population; a rising median age signifies a population is growing older. The Age-Sex Pyramid is a graphical illustration that shows the distribution of various age groups in a population, broken down by sex. Its shape provides a clear visual representation of the population's past demographic trends and future potential. The Dependency Ratio is a crucial measure of the economic burden that the non-working population (the young and the old) places on the working-age population. It is further broken down into the Child Dependency Ratio (the ratio of the young population to the working-age population) and the Old-Age Dependency Ratio (the ratio of the elderly population to the working-age population). The sum of these two constitutes the Total Dependency Ratio, an indicator with significant implications for public finance, social security, and economic planning.

Based on the above source, attempt the following five questions.

291. What does the Median Age of a population represent?
(A) The average age of the entire population.
(B) The most common age within the population.
(C) The age that divides the population into two numerically equal halves.
(D) The mandatory retirement age in a country.

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257. According to the passage, the classic pyramidal age structure in developing countries is a direct consequence of:
(A) long-term low fertility and high life expectancy.
(B) government policies promoting smaller families.
(C) significant emigration of the working-age population.
(D) historically high fertility rates leading to a large young population.

258. The passage suggests that the age-sex structure of a population is influenced by:
(A) a combination of demographic, social, economic, and cultural factors.
(B) exclusively geographical and climatic conditions.
(C) only the level of technological advancement in a country.
(D) the political ideology of the ruling government alone.

259. Which of the following can be inferred as a key relevance of studying age-sex structure?
(A) It helps in predicting geological shifts and climate change.
(B) It is primarily useful for historical records with no future implications.
(C) It dictates future growth potential and the demand for social services.
(D) It is only relevant for determining the sex ratio at birth.

260. The contrast between the age structures of developed and developing countries is primarily attributed to differences in:
(A) long-term fertility trends and life expectancy.
(B) geographical size and location.
(C) political systems and governance.
(D) ethnic and linguistic composition.

Direction : Please read the following source carefully.

The composition of India's population is a multifaceted mosaic shaped by an intricate interplay of demographic, social, economic, and cultural factors. These factors collectively influence the nation's age-sex structure, which is central to its population dynamics. Demographically, the transition from high to lower mortality and fertility rates has been the primary driver, creating a youthful population bulge. Socially, factors such as marriage patterns, the status of women, and levels of education profoundly affect fertility decisions and, consequently, the age structure. Economically, the shift from an agrarian to an industrial and service-based economy alters family size norms and the perceived value of children, impacting the base of the population pyramid. Culturally, deep-seated preferences for sons, religious beliefs, and traditional family values can skew the sex ratio and influence fertility behaviour. The relevance of understanding these interconnected factors is paramount for policy-making. A skewed age-sex structure can have significant repercussions, affecting the dependency ratio, the potential for demographic dividend, and the social security framework. Analysing these components provides a comprehensive picture of India's demographic journey and the challenges and opportunities that lie ahead, mirroring patterns observable at a global level but with unique national characteristics.

Based on the above source, attempt the following five questions.

261. According to the passage, which factor is described as the primary demographic driver of India's youthful population bulge?
(A) The transition from lower to higher mortality and fertility rates.
(B) The stable and unchanging demographic profile over decades.
(C) The large-scale international migration into the country.
(D) The transition from high to lower mortality and fertility rates.

262. The passage suggests that the economic shift from an agrarian to a service-based economy in India primarily affects the population structure by:
(A) increasing the cultural preference for sons.
(B) altering family size norms and the value placed on children.
(C) having no significant impact on fertility decisions.
(D) reinforcing traditional, large family structures.

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(C) the management of infectious diseases.
(D) emergency and trauma care.

299. Which of the following is mentioned as an "emerging issue" related to the elderly?
(A) The high birth rate in their generation.
(B) The need for age-friendly cities and concerns about mental health.
(C) Their resistance to modern technology.
(D) Their contribution to the national economy.

300. The text implies that a key social consequence of changing living arrangements for the elderly is:
(A) potential for increased social isolation.
(B) increased political engagement.
(C) greater financial security.
(D) improved physical health.

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(C) The speed of change in the level of urbanization over a period.
(D) The equality of population distribution within a single city.

270. The primary purpose of using measures like the Rank-size rule, Gini ratio, and dissimilarity index is to:
(A) replace the need for qualitative descriptions of population distribution.
(B) exclusively focus on the economic aspects of population.
(C) create a perfectly even distribution of population across all regions.
(D) provide a more rigorous and analytical framework for understanding spatial concentration.

Direction : Please read the following source carefully.

The spatial distribution, density, and concentration of population across the globe are not random but are shaped by a complex interplay of factors that can be broadly categorized. These factors operate at varying scales, from global and national to regional patterns. Physical factors have historically been dominant, with population density correlating strongly with climate, topography, soil fertility, and water availability. Coastal plains, river valleys, and temperate climates tend to support higher population concentrations than do deserts, high mountains, or polar regions. However, with technological and economic development, human and socio-economic factors have gained increasing importance. The location of economic opportunities, such as industries and service sector hubs, creates powerful pull-factors for migration, leading to high urban densities. Infrastructure development, including transport networks and communication links, enhances accessibility and encourages settlement. Furthermore, political factors, such as government policies on land use, regional development, and the establishment of new administrative centres, can deliberately alter population distribution. Historical factors, including patterns of colonization and historical trade routes, also leave a lasting imprint on current demographic landscapes. These national, regional, and global patterns are therefore a dynamic product of the ongoing interaction between the physical environment and human activity.

Based on the above source, attempt the following five questions.

271. According to the passage, which of the following is a primary physical factor affecting population concentration?
(A) The location of service sector hubs.
(B) Government policies on regional development.
(C) Climate, topography, and water availability.
(D) Historical patterns of colonization.

272. The passage suggests that with technological and economic development, the influence of which factors on population distribution has increased?
(A) Only climatic and topographical factors.
(B) Human and socio-economic factors.
(C) Historical and legacy factors exclusively.
(D) Random and unpredictable events.

273. Which of the following is presented as an example of a political factor affecting population distribution?
(A) The natural fertility of the soil in a region.
(B) The presence of a major river valley.
(C) The historical development of trade routes.
(D) The establishment of new administrative centres by the government.

274. What can be inferred from the passage about the relationship between physical environment and human activity?
(A) The physical environment and human activity interact dynamically to shape population patterns.
(B) Population distribution is solely determined by the physical environment.
(C) Human activity has no impact on population patterns, which are fixed.
(D) Human activity has completely overcome the constraints of the physical environment.

275. The passage indicates that regions with high population concentrations, such as coastal plains and river valleys, are characterized by:
(A) strong government intervention.
(B) recent industrial development.
(C) supportive physical factors like fertile soil.

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five questions.

251. According to the passage, what is a key characteristic of the temporal change in India's population?
(A) A consistent and stable growth rate throughout its history.
(B) A phase of population explosion following a rapid decline in death rates.
(C) A rapid decline in birth rates preceding the decline in death rates.
(D) A recent trend of population decline similar to developed countries.

252. The passage suggests that the spatial distribution of population in India is primarily characterized by:
(A) significant variation with dense clusters in fertile and coastal areas.
(B) uniform density across all states and regions.
(C) higher concentration in mountainous and arid zones.
(D) a random and unpredictable settlement pattern.

253. Which of the following can be inferred about the global perspective on population change from the passage?
(A) All countries are currently experiencing rapid population growth.
(B) Population growth rates are uniform across all developing nations.
(C) Developed countries may be facing population stabilization or decline.
(D) The global population has been stable for the last two centuries.

254. The passage emphasizes that analysing changes in population size and distribution is crucial for:
(A) promoting uniform population density globally.
(B) limiting international migration patterns.
(C) preserving historical settlement patterns.
(D) achieving effective resource allocation and socio-economic planning.

255. The term "spatial and temporal changes" in the context of the passage refers to:
(A) changes in population structure across different social classes over time.
(B) variations in cultural practices across regions and their evolution.
(C) shifts in population distribution over geographical space and across different time periods.
(D) fluctuations in economic output geographically and historically.

Direction : Please read the following source carefully.

The age and sex structure of a population is a critical demographic variable that provides deep insights into its past, present, and future dynamics. A stark contrast is observable between the age structures of developed and developing countries. Developed nations typically exhibit a more rectangular or columnar age-sex pyramid, indicating a larger proportion of older individuals and a smaller base of young people. This is a result of long-term low fertility and high life expectancy. Conversely, developing countries often display a classic pyramidal structure with a broad base, signifying a high proportion of children and a young population, which tapers off rapidly with increasing age due to historically high fertility rates. These structural differences are profoundly influenced by a complex interplay of demographic, social, economic, and cultural factors. For instance, cultural norms favouring large families or a specific sex, combined with economic conditions, can significantly affect the age-sex composition. The relevance of this structure in population dynamics is immense, as it dictates the potential for future growth, the dependency burden, and the demand for social services like education, healthcare, and pensions, both at a global level and within specific national contexts like India.

Based on the above source, attempt the following five questions.

256. What does a rectangular or columnar age-sex pyramid, typical of developed countries, indicate?
(A) A high proportion of children and a very young population.
(B) A larger proportion of older individuals and a smaller youth base.
(C) Rapid population growth and high fertility rates.
(D) A balanced distribution of population across all age groups equally.

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spatial variation in the pattern of ageing presents unique challenges for policy and planning. The social, economic, and health aspects of ageing are becoming increasingly critical areas of focus. An ageing population places greater demands on the healthcare system, particularly for managing chronic and non-communicable diseases. Socially, traditional family support systems are under strain due to changing family structures and migration, raising concerns about the living arrangements and well-being of the elderly. Economically, a larger elderly population requires robust pension and social security systems. Addressing these multifaceted aspects of ageing across India's diverse states is crucial for ensuring the dignity and quality of life for its senior citizens.

Based on the above source, attempt the following five questions.

281. According to the passage, the pattern of ageing in India is best described as:
(A) rapid and regionally diverse, with some states ageing faster than others.
(B) uniform and consistent across all states.
(C) a slow process with no significant regional variations.
(D) a trend only observed in the northern states of the country.

282. The passage suggests that the states in Southern India have a more advanced ageing process primarily because they have:
(A) higher fertility rates and lower life expectancies.
(B) lower fertility rates and higher life expectancies.
(C) a history of attracting elderly migrants from other states.
(D) government policies that discourage younger populations.

283. Which of the following is mentioned as a key challenge arising from India's ageing population?
(A) A surplus in the young workforce.
(B) Increased demand on healthcare systems for chronic diseases.
(C) A reduced need for educational infrastructure.
(D) A decline in urbanization rates across the country.

284. The passage indicates that traditional family support systems for the elderly are under strain due to:
(A) changing family structures and migration.
(B) government regulations limiting family size.
(C) an increase in the prevalence of infectious diseases.
(D) the robust nature of formal pension systems.

285. What is the central policy implication highlighted by the spatial variation of ageing in India?
(A) A one-size-fits-all national policy is sufficient for addressing ageing.
(B) The focus should be exclusively on the younger northern states.
(C) Policy and planning must account for the unique demographic profiles of different states.
(D) Economic aspects of ageing are more important than social or health aspects.

Direction : Please read the following source carefully.

Several demographic indicators are essential for analysing population composition and change. The concept of 'demographic dividend' refers to the potential for accelerated economic growth that can arise from a population's age structure, specifically when the share of the working-age population is larger than the non-working-age share of the population. This period offers a window of opportunity for rapid economic development if accompanied by the right social and economic policies. The Sex-ratio, calculated as the number of females per 1000 males, is a critical indicator of gender balance in a society and reflects the social status of women. A related but distinct measure is the Sex-ratio at birth, which specifically measures the number of female births for every 1000 male births and can indicate the prevalence of sex-selective practices. Another important fertility-related measure is the Child-Women ratio, which is the ratio of the number of young children (typically under 5 years) to the number of women of childbearing age (typically 15-49 years). This ratio serves as a useful proxy for fertility in the absence of reliable birth registration

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(D) historical political conflicts.

Direction : Please read the following source carefully.

Population ageing is a profound demographic shift, defined as a process where the proportion of older individuals in a population increases over time. This phenomenon is not merely about people living longer but involves a fundamental change in the age structure of society. The concepts and measures used to study population ageing are varied. A common measure is the percentage of the population aged 60 or 65 and over. Other measures include the median age of the population, which rises as the population ages. The components driving this global trend are primarily twofold: declining fertility rates and increasing longevity. Reduced fertility rates lead to a smaller proportion of young people at the base of the population pyramid, while improvements in healthcare, nutrition, and sanitation lead to lower mortality rates at older ages, thus increasing life expectancy. The interplay between these two components determines the pace and intensity of population ageing. A rapid decline in fertility, coupled with a steady increase in life expectancy, accelerates the process significantly. Understanding these concepts, measures, and components is the first step towards appreciating the widespread social and economic consequences of this demographic transition, which affects countries at all levels of development, albeit at different rates and times.

Based on the above source, attempt the following five questions.

276. What is the primary definition of population ageing provided in the passage?
(A) A process where the proportion of older individuals in a population increases.
(B) The process where the total population of a country decreases.
(C) An increase in the median age of a population.
(D) The simple fact that individuals are living longer than before.

277. According to the source, what are the two main components of population ageing?
(A) Increased migration and urbanization.
(B) Economic development and cultural change.
(C) Government policies and social welfare programs.
(D) Declining fertility rates and increasing longevity.

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278. The passage states that the median age of a population is used as:
(A) a measure of fertility decline.
(B) a measure to study population ageing.
(C) a component that causes ageing.
(D) a consequence of economic development.

279. According to the passage, what effect does a rapid decline in fertility have on population ageing?
(A) It slows down the process of population ageing.
(B) It has no significant effect on the age structure.
(C) It accelerates the process of population ageing.
(D) It only affects the younger age groups, not the elderly.

280. Which of the following can be inferred from the passage about the global nature of population ageing?
(A) It is a phenomenon exclusive to highly developed countries.
(B) It is a temporary trend that will soon reverse.
(C) It is caused solely by increased life expectancy, not fertility changes.
(D) It affects all countries, but at different rates and times.

Direction : Please read the following source carefully.

The trends and patterns of ageing in India reveal a demographic transition that is both rapid and regionally diverse. While the country as a whole is experiencing an increase in the proportion of its elderly population, the phenomenon is not uniform across its states. The process of ageing is more advanced in states that have led the demographic transition, particularly those in Southern India, which exhibit lower fertility rates and higher life expectancies. In contrast, many northern states with higher fertility rates have a younger population profile, though they are also beginning to show signs of ageing. This

292. According to the passage, the primary function of an Age-Sex Pyramid is to:
(A) provide a graphical illustration of the age and sex distribution.
(B) calculate the total dependency ratio.
(C) determine the median age of the population.
(D) predict economic growth with perfect accuracy.

293. The Total Dependency Ratio is defined in the source as:
(A) the ratio of the old-age population to the child population.
(B) the ratio of the working-age population to the non-working-age population.
(C) the difference between the Child Dependency Ratio and the Old-Age Dependency Ratio.
(D) the sum of the Child Dependency Ratio and the Old-Age Dependency Ratio.

294. A rising median age in a population is a direct indication that:
(A) the population is growing younger.
(B) the population is ageing.
(C) the fertility rate is increasing rapidly.
(D) the working-age population is shrinking in absolute numbers.

295. The Dependency Ratio is described as a measure of the:
(A) gender balance within the working-age population.
(B) rate of migration into the working-age population.
(C) economic burden placed by the non-working population on the working population.
(D) overall health and well-being of the elderly.

Direction : Please read the following source carefully.

The increasing proportion of the elderly in many societies brings to the forefront a range of social, economic, and health aspects of ageing that require careful consideration. A primary concern revolves around the living arrangements and family support systems for the elderly. Traditionally, multi-generational households provided a built-in support mechanism, but with increasing urbanization and modernization, this model is eroding, leading to a rise in smaller, nuclear family units and, consequently, more elderly individuals living alone or with only a spouse. This shift impacts the availability of informal care and can increase social isolation. From an economic perspective, dependency on others is a significant issue. Many elderly individuals, especially in developing countries, lack adequate pensions or savings, making them financially dependent on their children or the state. This raises questions about the sustainability of public pension systems and the need for new financial security products. Health aspects are also critical, as ageing is associated with a higher prevalence of chronic and degenerative diseases, necessitating a shift in healthcare services towards geriatric care and long-term management. Emerging issues related to the elderly include concerns about elder abuse, mental health, and the need for age-friendly cities and infrastructure to promote active and healthy ageing.

Based on the above source, attempt the following five questions.

296. According to the passage, what is a primary reason for the erosion of traditional family support systems for the elderly?
(A) Government policies promoting independent living.
(B) An increase in life expectancy for the elderly.
(C) The improved financial independence of the elderly population.
(D) Increasing urbanization and the rise of nuclear family units.

297. The passage identifies which of the following as a significant economic aspect of ageing?
(A) The financial dependency of the elderly due to a lack of pensions or savings.
(B) The high productivity of the elderly workforce.
(C) The decreasing cost of healthcare for the elderly.
(D) The reduced need for public pension systems.

298. From a health perspective, the passage emphasizes that ageing societies need to shift their focus towards:
(A) pediatric and childcare services.
(B) geriatric care and long-term management of chronic diseases.

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263. Which of the following is mentioned as a cultural factor affecting the age-sex structure of India's population?
(A) The level of industrialization.
(B) The rate of urbanization.
(C) The preference for sons and religious beliefs.
(D) The geographical distribution of resources.

264. What is the primary reason stated in the passage for why understanding the composition of India's population is relevant for policy-making?
(A) It allows for the accurate prediction of election outcomes.
(B) It helps in promoting a single national culture and language.
(C) It is necessary for regulating international trade agreements.
(D) A skewed age-sex structure impacts dependency ratios and the demographic dividend.

265. Based on the passage, the age-sex structure of India's population is best described as being shaped by:
(A) an intricate combination of multiple demographic, social, economic, and cultural factors.
(B) a single, dominant economic factor.
(C) only the government's demographic policies.
(D) factors that are unique to India and have no global parallels.

Direction : Please read the following source carefully.

To quantify the spatial distribution of population, geographers and demographers employ several measures of concentration. Basic population density, while useful, provides a crude average and often masks significant internal variations. To capture these nuances, more sophisticated indices are used. The Lorenz curve and the associated Gini's concentration ratio are powerful tools, originally from economics, adapted to measure the inequality of population distribution against a line of perfect equality. A higher Gini ratio indicates greater concentration in a few areas. Similarly, the distribution-dissimilarity index helps in comparing the distribution of two different population groups across various areal units. For urban studies, the tempo of urbanization measures the rate of change in the level of urbanization over time, reflecting the speed of population shift towards cities. Furthermore, the Rank-size rule offers a model for understanding the relationship between the rank and size of cities within a country or region, suggesting a hierarchical and predictable pattern of settlement sizes. These quantitative measures—density, dissimilarity index, Gini ratio, and Rank-size rule—provide an objective framework for analysing and comparing patterns of population concentration, moving beyond simple descriptions to a more rigorous and analytical understanding of spatial organisation.

Based on the above source, attempt the following five questions.

266. According to the passage, what is the primary limitation of using basic population density as a measure of distribution?
(A) It is too complex to calculate for large areas.
(B) It provides a crude average and can hide significant internal variations.
(C) It cannot be applied to urban populations.
(D) It is only useful for historical population data.

267. The passage states that the Gini's concentration ratio and the Lorenz curve are used to measure:
(A) the rate of change in urbanization over time.
(B) the inequality of population distribution against a benchmark of perfect equality.
(C) the relationship between the rank and size of cities.
(D) the degree of dissimilarity between two distinct population groups.

268. Which measure is specifically identified in the text for comparing the distribution of two different population groups across geographical units?
(A) Distribution-dissimilarity index
(B) Rank-size rule
(C) Gini's concentration ratio
(D) Tempo of urbanization

269. What does the "tempo of urbanization" measure, as described in the source?
(A) The absolute number of people living in cities.
(B) The hierarchical pattern of city sizes.

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1. (B) The arrangement of population on the Earth's surface.
   This concept describes the physical arrangement and spread of people across the land surface of the Earth. It provides a visual and statistical representation of how human populations are concentrated or dispersed in different geographic regions. By analyzing these patterns, researchers can identify the influence of environmental, economic, and social factors on settlement. This knowledge is vital for resource management and regional development planning.

2. (A) The speed or rate of change in the level of urbanization.
   Urbanization refers to the process by which a large proportion of a total population resides in cities and towns. The tempo specifically indicates the speed or velocity at which this proportion increases over a defined period. Measuring this rate helps policymakers anticipate the demand for urban infrastructure, housing, and public services. A high tempo suggests rapid social and economic shifts within a specific region.

3. (C) It is a static measure that remains constant across all geographical regions.
   Population density is a dynamic metric used to assess the concentration of individuals within a specific unit of area. It is typically calculated by dividing the total population by the total land area. This measure varies significantly between regions due to environmental factors, economic opportunities, and social history. Understanding these variations is essential for planning public health initiatives, infrastructure development, and efficient resource allocation.

4. (D) Fertility
   Demographic factors represent biological and statistical variables that directly influence the size and composition of a human population. Fertility is a primary driver that determines the number of births, which subsequently shapes the youthful portion of the age-sex pyramid. High fertility rates lead to a younger population structure. Analyzing these trends allows researchers to project future growth and assess the long-term sustainability of social systems.

5. (A) P-3, Q-4, R-2, S-1
   Different demographic tools serve unique analytical purposes. The Lorenz Curve illustrates inequality in distribution, while the Rank-Size Rule defines the hierarchical structure of urban settlements based on population. Density measures the number of persons per square kilometer, providing a sense of concentration. Median age identifies the central point of age distribution. Together, these indicators offer a comprehensive view of the demographic and spatial characteristics of populations.

6. (B) Developed countries typically have a higher proportion of their population in the older age groups.
   The age structure of a country reflects its history of fertility and mortality. Developed nations generally experience lower birth rates and higher life expectancy, leading to a significant proportion of elderly citizens. This demographic shift contrasts with developing countries, which often have younger populations due to higher fertility. Understanding these differences is crucial for comparative studies on social security, healthcare needs, and labor market dynamics.

7. (D) A shift in the population's age structure, with a larger proportion being of working age.
   Economic growth can accelerate when a population undergoes a transition that results in more people in the productive age group relative to dependents. This window of opportunity occurs when birth rates fall, reducing the child dependency ratio. If accompanied by investments in education and health, this shift can lead to increased savings and productivity. It remains a temporary phase requiring strategic policy interventions for success.

8. (C) a, b, c, and e only
   Multiple factors simultaneously influence the age and sex composition of a population. High birth rates naturally increase the youth population,

for public services, such as education for children and geriatric care for the elderly. Similarly, the size of the working-age population determines the labor supply and the tax base. By analyzing the age-sex structure, governments can accurately allocate resources and develop policies that address the specific needs and contributions of every segment of the population.

71. (D) A low level of fertility or high child mortality.
This indicator compares the number of young children to the number of women of reproductive age. A low value suggests that there are fewer children relative to potential mothers, which can be caused by a decrease in birth rates or a significant number of deaths among infants and young children. It provides a useful proxy for understanding reproductive trends and early childhood survival rates within a population, especially when detailed birth registration data is not available.

72. (A) A long-term decline in fertility rates.
The process of a population becoming older is primarily driven by a sustained reduction in the number of births. When fertility falls, the proportion of young people in the population decreases, which naturally increases the relative share of the elderly. While improvements in life expectancy also play a role, the narrowing of the pyramid at the base is often the most powerful demographic factor leading to the structural shift characteristic of population ageing.

73. (C) The process of population ageing is becoming more prominent, especially in southern states.
India is undergoing a significant demographic transition, but the pace varies across the country. Southern states have achieved lower fertility rates and higher life expectancy earlier than other regions, leading to a more visible increase in their elderly population. While the national population continues to grow, the rate is slowing down. Understanding these regional trends is essential for state-level planning, particularly concerning the development of healthcare and social support systems for the ageing population.

74. (A) Need for economic, social, and physical support.
In the context of the elderly, dependency refers to the reliance on others for various fundamental needs. This includes financial assistance when they are no longer working, emotional and social engagement to prevent isolation, and physical help with daily activities as their health declines. Assessing these needs is critical for designing comprehensive support systems, including pensions, geriatric healthcare, and community-based services that ensure the dignity and well-being of the senior population in a changing society.

75. (B) b, c, and d only
A demographic dividend is a potential economic gain that occurs when a country's workforce grows larger than its dependent population. This is a temporary phase that arises during the demographic transition. However, the benefits are not automatic; they depend on whether the government provides quality education, healthcare, and job opportunities to utilize this large labor force. India is currently in this phase, making strategic investments in human capital essential to realize these potential economic advantages.

76. (A) Both Statement I and Statement II are correct.
Measuring how resources or populations are distributed requires specific statistical tools. The Lorenz curve provides a visual representation of the degree of inequality, showing the cumulative proportion of a variable against the cumulative proportion of the units. The Gini ratio quantifies this relationship into a single value between zero and one. Together, these methods allow researchers to objectively compare disparities across different regions or time periods, facilitating more informed and equitable policy-making and spatial analysis.

77. (C) The planet's rotational speed
Human settlement patterns are influenced by a variety of environmental and human-made factors. Physical features such as a favorable climate, flat topography, and fertile soil have historically attracted large populations by providing the resources needed for agriculture and comfortable living. In contrast, the rotation of the planet is a fundamental astronomical constant that affects everyone equally and does not create regional variations in population density. Understanding these primary drivers is essential for the study of population geography.

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hundred and five boys for every one hundred girls. These indicators are vital for tracking gender-based health outcomes, migration impacts, and the potential for future growth.

17. (B) Rapidly growing and young.
A population pyramid with a broad base reflects high birth rates, resulting in a large proportion of children and adolescents. The narrowing top indicates higher mortality rates in older age groups. This shape is characteristic of nations in the early stages of demographic transition. Such populations have high growth potential but also face significant demands for education, pediatric healthcare, and eventually, the creation of millions of new jobs.

18. (A) A high degree of spatial segregation between two population groups.
The Distribution-Dissimilarity Index is a statistical measure used to evaluate how two groups are spread across different geographical units. A high value suggests that the groups live in separate areas, reflecting significant residential segregation. This index is particularly useful for urban planners and sociologists studying ethnic, racial, or economic divisions within a city. It indicates the percentage of a group that would need to move for perfect integration.

19. (C) The need for specialized healthcare and social security systems.
As populations age, societies must address the unique challenges associated with a larger elderly cohort. This includes the development of geriatric medical services and the ensures of financial stability through pension schemes. These requirements arise because older individuals often face chronic health conditions and may no longer be active in the labor market. Addressing these needs is a priority for policymakers aiming to ensure the well-being of the senior population.

20. (A) P-4, Q-2, R-3, S-1
Demographic indicators rely on specific formulas to describe population characteristics. The child dependency ratio focuses on the youth relative to workers, while the old-age ratio tracks the elderly. The sex ratio at birth monitors gender balance among newborns. The child-women ratio serves as a proxy for fertility by comparing young children to women of reproductive age. Each measure provides unique insights into the social and economic structure.

21. (C) Gini's concentration ratio
Measuring how a population is concentrated across different regions requires statistical tools that evaluate inequality in spatial distribution. This specific ratio, derived from the Lorenz curve, provides a precise numerical value indicating the degree of concentration. Unlike birth or mortality rates, which describe demographic events, this ratio focuses on the geographic spread of individuals. It is widely used in spatial analysis to identify areas of overpopulation or extreme dispersion.

22. (B) The future growth potential, labor supply, and social needs of a population.
The age and sex composition of a population is a critical determinant of its future trajectory. A large youth cohort suggests high growth momentum, while the size of the working-age group defines the potential labor force. Additionally, the proportion of elderly individuals dictates the requirements for social security and healthcare. Analyzing this structure allows governments to plan effectively for education, employment, and various social welfare programs over the coming decades.

23. (C) a, b, and d only
Population ageing is a complex demographic phenomenon driven by shifts in birth and death rates. It is measured by the rising proportion of elderly individuals and an increasing median age. Contrary to common misconceptions, it is becoming a global trend affecting both developed and developing nations. This transition leads to a higher old-age dependency ratio, which necessitates adjustments in public policy, especially concerning healthcare, social support, and financial security for retirees.

24. (A) The location of employment opportunities and industrial centers.
Economic factors are primary drivers of where people choose to settle. Areas with abundant jobs, thriving industries, and robust commercial activity act as powerful pull factors, attracting migrants from other regions. This leads to high population concentrations in urban and industrial hubs. Conversely, regions lacking

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economic opportunities often see out-migration. Understanding these economic incentives is essential for analyzing spatial distribution patterns and planning for balanced regional development across the country.

25. (A) Both A and R are true and R is the correct explanation of A.
Variations in the gender balance across different regions often stem from deep-seated cultural beliefs and practices. In many areas, a historical preference for sons combined with the neglect of female children has created significant imbalances. These socio-cultural factors directly influence the demographic profile, leading to skewed sex ratios in several states. Addressing these underlying social issues is necessary for achieving demographic stability and ensuring the rights and well-being of all individuals.

26. (A) The population of a city is inversely proportional to its rank in the size hierarchy.
This rule describes a common pattern in the distribution of city sizes within an urban system. It suggests that the population of any city should be roughly equal to the population of the largest city divided by its rank. For example, the second-largest city would be half the size of the first. This concept helps geographers evaluate the balance and maturity of a country's urban hierarchy and spatial organization.

27. (D) Median Age - Divides a population into two equal size groups, one older and one younger.
Median age is a significant indicator used to summarize the age distribution of a population. It identifies the exact midpoint, where half the people are older and half are younger than that age. A rising median age typically signifies an ageing population. This measure is more robust than the mean age as it is less influenced by extreme values. It provides a clear snapshot of the overall demographic maturity of a society.

28. (B) Coastal and urban areas
Over the last century, human settlement patterns have shifted dramatically toward specific geographic zones. Coastal regions offer advantages for trade and transportation, while urban centers provide concentrated economic opportunities and services. This migration has led to massive population clusters in these areas. Understanding these shifts is critical for addressing challenges related to urban sprawl, environmental sustainability, and the provision of infrastructure in increasingly crowded coastal and metropolitan environments.

29. (C) The number of young children relative to the number of women of childbearing age.
This ratio serves as a common proxy for fertility in demographic studies, especially when birth registration data is incomplete. It measures the number of children under age five for every one thousand women of reproductive age. A high ratio indicates a high level of fertility in the recent past. This indicator is useful for comparing reproductive trends across different regions or time periods, helping researchers understand changes in population growth dynamics.

30. (D) a, b, c, and d
Human distribution is the result of a complex interplay between natural and human-made factors. Physical features like climate and water are foundational, while economic drivers like industrial zones attract large numbers of people. Additionally, government initiatives, such as the creation of special economic zones, can intentionally shift population concentrations. Recognizing the multi-dimensional nature of these influences is essential for accurate spatial analysis and the implementation of effective regional planning strategies.

31. (A) Their household composition and whether they live alone, with a spouse, or with children.
As individuals age, their social environment significantly affects their well-being. Living arrangements describe who the elderly reside with, which is a key indicator of the support systems available to them. This information is vital for policymakers to identify vulnerable seniors who may lack family care. Changes in these patterns, such as a shift toward solitary living, often reflect broader societal trends like urbanization, migration, and the nuclearization of families.

32. (A) Statement I is correct, and Statement II is a direct consequence of Statement I.
A demographic dividend occurs when a country experiences a surge in its productive age group. Since this cohort supports both the young and

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the old, a high proportion of workers naturally leads to a lower total dependency ratio. This favorable balance allows for increased investment in economic development and human capital. However, the benefits are not automatic and require policies that ensure employment and productivity for the large working-age population.

33. (B) The age at marriage prevalent in a society.
Cultural traditions and societal norms play a pivotal role in shaping demographic structures. The typical age at which individuals marry directly influences fertility rates and the timing of childbearing. Societies with earlier marriage ages often have higher birth rates, leading to a younger population profile. These cultural factors interact with economic and biological variables to define the age-sex composition of a community, making them essential for comprehensive demographic analysis and planning.

34. (A) A very even or equitable distribution of population.
The Lorenz curve is a graphical tool used to visualize the degree of equality in a distribution. When the curve lies close to the diagonal line of perfect equality, it indicates that the population is spread relatively evenly across the designated units of area. This pattern suggests a lack of extreme concentration in any specific region. Such analysis is valuable for understanding spatial balance and for evaluating regional development and resource distribution policies.

35. (B) P-2, Q-1, R-4, S-3
Demographic concepts are linked to specific social and economic outcomes. A demographic dividend offers economic growth potential, while population ageing is defined by an increase in older individuals. High fertility rates naturally create a youthful age structure with a broad base. Meanwhile, sex-selective migration can lead to significant imbalances in the sex ratio of specific regions. Understanding these relationships is essential for interpreting demographic data and formulating effective public policies for development.

36. (D) Crude Death Rate
Measures of population concentration are designed to quantify how people are distributed across space. Density, the Lorenz Curve, and the Gini Ratio are standard tools for this spatial analysis. In contrast, the crude death rate is a vital statistic that measures the frequency of deaths within a population over a specific time. It is a component of population change but does not describe the physical arrangement or concentration of people across a territory.

37. (C) Ageing at the base and ageing at the apex of the population pyramid.
This demographic shift occurs through two primary mechanisms. Ageing at the base is caused by declining fertility, which reduces the proportion of children and narrows the bottom of the pyramid. Ageing at the apex results from increased life expectancy, which allows more individuals to survive into old age. Both components contribute to the overall increase in the median age and the proportion of elderly persons, reflecting a transition toward a mature population structure.

38. (A) a, b, and c only
India's demographic profile is characterized by a large youth population, which presents a significant economic opportunity. Historically, the sex ratio has been unfavorable to women due to various social factors. Additionally, there are vast regional differences in how densely people are packed across different states. While ageing is becoming a concern in some regions, it is not yet a universal issue. Urbanization is occurring, though its pace varies significantly across the country.

39. (D) Mortality and migration rates between males and females.
The balance of males and females in a population is primarily shaped by differences in how long each sex lives and their patterns of movement. Biologically, women often have higher life expectancy, leading to more females in older age groups. Furthermore, economic opportunities often drive gender-specific migration, which can skew local sex ratios. While other factors like education are important, they do not directly determine the numeric balance of the sexes as mortality and migration do.

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40. (A) Both A and R are true and R is the correct explanation of A.
Real-world urban systems often deviate from theoretical models like the Rank-Size Rule. Many countries feature a primate city that is disproportionately larger than any other urban center, often serving as the primary hub for politics, culture, and economy. This concentration of resources and people disrupts the predicted hierarchical progression of city sizes. Understanding these deviations is essential for geographers and urban planners who analyze spatial organization and seek to promote balanced regional growth.

41. (C) A fertile river valley with a moderate climate.
Environmental factors significantly influence where human populations thrive. Regions with moderate temperatures, abundant fresh water, and fertile soil for agriculture have historically supported high population densities. These areas provide the necessary resources for food production and comfortable living conditions. In contrast, extreme environments like deserts, arctic tundras, or rugged mountains present severe challenges that limit settlement. Identifying these favorable zones is a fundamental step in studying global and regional population distribution.

42. (A) It reflects the overall age distribution and is a key measure of population ageing.
The median age is a vital demographic indicator that identifies the exact middle point of a population's age structure. By splitting the population into two equal groups, it provides a clear sense of whether a society is youthful or ageing. A rising median age over time is a definitive sign of demographic maturity. This measure is essential for planners to anticipate the changing needs for education, employment, healthcare, and social security.

43. (D) Family support remains the primary source of care, though facing strains due to changes.
In many societies, the family has traditionally been the main provider of care for elderly members. This remains true in contemporary India, although social shifts like urbanization, migration, and the rise of nuclear families are placing new pressures on these traditional systems. While the state is gradually increasing its role, the family continues to be the bedrock of social and emotional support for the aged. Recognizing these dynamics is crucial for developing social welfare policies.

44. (B) The level of residential segregation between two groups.
This index is a mathematical tool used to quantify how evenly or unevenly two different population groups are distributed across a set of spatial units. It measures the percentage of one group that would need to relocate to match the distribution of the other group. High values indicate significant segregation, which is often a key area of study for sociologists and urban planners investigating social integration and spatial disparities within cities or regions.

45. (C) a, b, and d only
Analyzing how people are spread across a territory involves specific statistical measures. The Gini ratio and the Lorenz curve evaluate inequality in distribution, while the Rank-Size rule focuses on the hierarchy of urban centers. The Dissimilarity Index measures segregation between groups. Conversely, the Total Fertility Rate is a measure of reproductive behavior and population growth, not spatial distribution. Selecting the correct tools is essential for accurate geographic and demographic analysis of a region.

46. (A) Both Statement I and Statement II are correct, and Statement II is the correct explanation.
The proportion of children in a population is primarily a reflection of past and current birth rates. Many developing nations have historically high fertility levels, resulting in a large youth cohort. This creates an expansive population pyramid with a very wide base. Understanding this relationship is critical for planners who must provide for the education and health needs of a large number of young people while preparing for their eventual entry into the workforce.

47. (B) Kinship and ethnic ties
Population distribution is shaped by various factors. Economic drivers include the availability of jobs, the presence of industries, and the quality of transportation networks, which facilitate trade and movement. These factors attract individuals seeking economic advancement. In contrast, kinship and ethnic ties are considered social factors. They influence settlement patterns

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through cultural affinity and social support networks rather than purely through economic incentives. Distinguishing between these categories is important for a comprehensive spatial analysis.

48. (A) 1, 2, 4, 3
Spatial analysis tools range from basic ratios to complex measures of inequality. Population density provides a general sense of how many people live in an area. The Rank-Size Rule introduces a hierarchical perspective on urban centers. The Lorenz Curve and the Gini Ratio offer sophisticated ways to visualize and quantify the degree of inequality or concentration within a distribution. Following this logical progression allows researchers to deepen their understanding of population patterns and regional disparities.

49. (C) An elderly and shrinking population.
A constrictive pyramid shape occurs when fertility rates remain below the replacement level for an extended period. The narrowing base indicates fewer births, while the wider top reflects a larger proportion of older individuals. This demographic profile is common in nations with advanced ageing and potential population decline. It signals future challenges such as a shrinking labor force and increased pressure on social security and healthcare systems due to a high old-age dependency ratio.

50. (C) P-4, Q-1, R-2, S-3
Dependency ratios are calculated by comparing different age groups to the productive segment of the population. The child dependency ratio uses the youth population as the numerator, while the old-age ratio uses those aged sixty-five and over. The total dependency ratio combines both groups. In all these measures, the working-age population serves as the common denominator. These statistics are vital for assessing the social and economic support requirements of a nation.

51. (C) Changes that happen over a period of time.
Temporal changes in population refer to shifts in size, composition, or distribution that occur as time progresses. This includes the study of historical growth rates, changes in birth and death rates, and the evolution of age structures. Analyzing these trends over years or decades allows demographers to identify patterns of development and predict future demographic scenarios. This long-term perspective is essential for sustainable planning and the formulation of effective public policy.

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52. (B) An increased demand for geriatric healthcare services.
As the proportion of older individuals in a population grows, the healthcare system must adapt to their specific needs. Ageing is often associated with a higher prevalence of chronic and non-communicable diseases, which require specialized medical attention and long-term care. This shift necessitates increased investment in geriatric medicine, training for healthcare professionals, and the development of age-friendly medical facilities. Addressing these health aspects is a critical component of managing the demographic transition toward an older society.

53. (C) a, b, d and e only
The global distribution of humans is highly uneven and influenced by geography. Most people reside in the Northern Hemisphere and are concentrated in fertile coastal areas or major river valleys. Four primary population clusters exist in Asia, Europe, and North America. In contrast, extreme environments like high-altitude mountains remain sparsely inhabited due to physical challenges. Recognizing these patterns of concentration and dispersion is fundamental for understanding global demographic dynamics and human-environment interactions.

54. (A) The availability of social security, their health status, and their living arrangements.
The extent to which elderly individuals rely on their families for support is determined by a combination of personal and systemic factors. Poor health or a lack of personal savings increases dependency. Furthermore, the presence or absence of government pension schemes and specialized healthcare services plays a significant role. Finally, the social environment, including who the senior lives with, dictates the immediate level of care and assistance available for daily living.

while migration patterns can leave specific regions with skewed sex ratios. Historical events like conflicts often result in distinct gaps in male cohorts. Additionally, increased longevity expands the elderly segment. Recognizing these varied influences is necessary for accurate demographic modeling and the development of targeted social programs.

9. (C) an increase in the proportion of older persons in a population.
This process is characterized by a rise in the percentage of the population aged sixty or sixty-five and above. It results from declining fertility rates and improvements in life expectancy, which together shift the balance toward older cohorts. This shift has profound implications for social security systems, geriatric healthcare, and the labor market. Managing these demographic changes requires a comprehensive understanding of both social and economic variables.

10. (B) Both A and R are true but R is not the correct explanation of A.
The Lorenz curve provides a visual representation of how a specific variable is distributed across a population. A straight diagonal line indicates a perfectly even distribution where every segment has an equal share. While the Gini ratio is mathematically derived from this curve to quantify inequality, it describes the magnitude of deviation rather than explaining the geometric properties of the diagonal line. Both concepts are fundamental to statistical analysis.

11. (D) Urbanization
Population change is primarily driven by three core demographic processes: fertility, mortality, and migration. These factors directly add to or subtract from the total number of individuals in a given area. While urbanization describes the movement of people from rural to urban settings and the growth of cities, it is a process of redistribution rather than a direct component that determines the overall size.

12. (A) 2, 3, 4, 1
The evolution of a population's age structure follows a predictable path during the demographic transition. Initially, high birth and death rates create a youthful base. As mortality declines, the proportion of young survivors increases. Subsequently, falling fertility begins to narrow the base of the pyramid. Finally, sustained low fertility and mortality lead to an older population. This sequence helps researchers categorize countries according to their demographic maturity.

13. (C) The sum of the child and old-age populations divided by the working-age population, multiplied by 100.
This ratio quantifies the economic burden placed on the productive segment of the population by those who are typically not in the workforce. By combining the number of individuals under fifteen and over sixty-four, and comparing them to the working-age group, analysts can assess social support needs. A higher ratio indicates a greater pressure on workers to provide for the healthcare, education, and pension requirements.

14. (D) Preference for male children
Cultural norms and societal values can significantly distort the demographic profile of a region. In some societies, a strong preference for male offspring leads to social interventions that skew the sex ratio at birth. This preference impacts the gender balance across different age cohorts and has long-term social consequences. Analyzing these social factors is essential for understanding regional demographic imbalances and promoting gender equality through various public policies.

15. (D) a, b, c, and d
The Gini concentration ratio is a versatile statistical tool used to measure inequality across various disciplines. In demography, it quantifies the unevenness of population distribution within a territory. A value of zero signifies perfect equality, whereas a value of one represents maximum concentration. This index is crucial for identifying regional disparities and evaluating the effectiveness of spatial development policies. It provides a single numeric value for comparison.

16. (A) Both Statement I and Statement II are correct.
Sex ratio is a fundamental demographic measure used to compare the number of males and females within a population. While the standard expression varies by country, it often relates females to males. Biologically, the ratio at birth naturally favors males, with approximately one

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population size and administrative criteria. Together, these processes lead to significant spatial redistribution and the expansion of metropolitan areas, requiring proactive planning for infrastructure and sustainable urban growth.

63. (C) Lorenz Curve
The degree of inequality in a distribution is visually represented by a graph that plots cumulative percentages of two variables. The Gini concentration ratio is the mathematical expression of the area between this curve and the line of perfect equality. Together, they provide a clear and quantifiable measure of how concentrated a population or resource is within a given territory. This graphical method is foundational for spatial analysis and for evaluating regional disparities and social equity.

64. (D) Increase in the crude birth rate.
Population ageing is the process where a society becomes older, evidenced by a rising median age and an increasing proportion of elderly residents. It is primarily caused by declining birth rates and rising life expectancy. Therefore, an increase in the crude birth rate would have the opposite effect, creating a more youthful population. Demographic measures of ageing focus on the older cohorts and the shift in the balance between the young and the old.

65. (B) P-2, Q-1, R-3, S-4
Different states in India exhibit distinct demographic patterns based on their social and economic history. Kerala is known for advanced ageing due to low fertility, while Bihar maintains high population density and birth rates. States like Punjab have historically seen significant male out-migration for labor. Uttar Pradesh remains the most populous state in terms of absolute numbers. Recognizing these regional variations is essential for understanding the complex demographic landscape of the country and for state-level planning.

66. (B) Inter-generational relationships and family structures.
The shift toward an older population profile profoundly impacts social dynamics. As people live longer and birth rates fall, the balance of generations within families changes. This can lead to smaller families and a longer duration of caregiving roles. Understanding these shifts is vital for addressing the social support needs of the elderly and for managing the evolving expectations and responsibilities between young and old members of society, ensuring continued social cohesion and support.

67. (A) Concentration refers to the pattern of distribution, while density is a ratio of people to area.
While related, these two concepts describe different aspects of population geography. Density is a simple arithmetic ratio that indicates how many people live in a unit of area. Concentration, however, refers to the degree of unevenness or clustering in how people are spread across a larger territory. A region can have low overall density but high concentration if most residents live in a single city. Both measures are necessary for a complete spatial analysis.

68. (A) a, b, c and d only
The transition toward an older society brings a variety of systemic challenges. Economically, it places pressure on pension funds and may lead to a smaller workforce. Socially, it necessitates the development of geriatric healthcare and long-term support systems as family structures evolve. However, ageing is typically associated with declining rather than increasing fertility rates. Addressing these emerging issues requires proactive and comprehensive policy planning to ensure the well-being and productivity of an ageing population.

69. (C) 3.33 million
The Rank-Size Rule is a theoretical model that predicts the population of cities based on their relative standing in an urban hierarchy. It posits that the nth largest city will have a population approximately equal to the population of the largest city divided by n. In this scenario, the third-largest city would be one-third the size of the leading city. This concept helps researchers evaluate the spatial balance and structural maturity of a country's urban system.

70. (A) Both A and R are true and R is the correct explanation of A.
Planning for a nation's future requires a deep understanding of its demographic makeup. Different age groups have distinct requirements

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55. (A) Both A and R are true and R is the correct explanation of A.
Significant deviations from the natural gender balance among newborns often reflect underlying social biases. In some regions, a deep-seated cultural preference for male children leads to interventions that prevent female births. This results in a skewed sex ratio at birth, which has serious long-term demographic and social consequences. Addressing these practices requires a combination of strict legal measures and social awareness programs to change traditional attitudes toward gender and the value of daughters.

56. (A) Historical demographic transitions.
Developed and developing countries are at different stages of a process characterized by shifts from high to low fertility and mortality. Developed nations completed this transition earlier, resulting in older populations and stable growth. Many developing nations are currently experiencing rapid growth with a youthful age structure as mortality has fallen faster than fertility. Understanding these historical stages is essential for comparing national demographic profiles and predicting future trends in global population dynamics and social needs.

57. (D) Demographic Factor - Annual rainfall
Factors affecting where people live are categorized based on their nature. Physical factors include environmental variables like water availability and climate, which includes annual rainfall. Therefore, rainfall is an environmental or physical factor, not a demographic one. Demographic factors relate to population statistics like birth, death, and migration. Correctly classifying these influences is necessary for accurate spatial analysis and understanding the complex drivers of human settlement and regional population patterns.

58. (B) An increase in the proportion of the very old (e.g., 80+ years) among the elderly population.
Population ageing occurs at different levels. While general ageing increases the percentage of those over sixty-five, ageing at the apex specifically refers to the rapid growth of the oldest-old segment. This is driven by significant improvements in medical care and living conditions that allow more people to survive into their eighties and beyond. This trend presents unique challenges for long-term care, specialized geriatric services, and the financial sustainability of support systems for the very elderly.

59. (C) It is a time-limited phase where the age structure is favorable for accelerated growth.
This demographic phenomenon occurs during a specific window when the proportion of working-age individuals is high relative to dependents. It offers a potential boost to the economy through increased labor supply and savings. However, this advantage is temporary as the large working cohort will eventually age and enter the dependent category. To capitalize on this dividend, a nation must invest in human capital and implement policies that create productive employment for its youth.

60. (D) a, b, c, and d
The population pyramid is a powerful graphic tool used to visualize the age and sex composition of a society. It separates the population by gender and displays them in age cohorts, with younger groups at the bottom. The overall shape reveals birth and death trends, while imbalances between the sides can highlight the impacts of migration or specific mortality events. This comprehensive view is essential for demographic analysis, historical interpretation, and future social planning.

61. (A) Distribution-Dissimilarity Index
Measuring the degree of segregation between different social or ethnic groups within a city requires specialized statistical tools. This specific index quantifies how much two groups differ in their spatial distribution across various neighborhoods. It indicates the proportion of a group that would need to relocate to achieve an integrated pattern. This measure is indispensable for sociologists and urban planners aiming to understand social barriers and promote more inclusive and equitable urban environments.

62. (A) Both Statement I and Statement II are correct.
Many nations are experiencing a rapid increase in their urban population share. This acceleration is driven by people moving from villages to cities in search of better economic opportunities and services. Additionally, as rural areas develop, they are often reclassified as urban based on

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78. (D) Age-Sex Pyramid
Visualizing the demographic structure of a population is best achieved through a specialized bar graph that displays the distribution of individuals by both age and gender. This graphic reveals a society's history of fertility, mortality, and migration at a glance. The shape of the pyramid provides immediate insight into whether a population is growing rapidly, remaining stable, or beginning to shrink. It is a fundamental tool for demographers, geographers, and social planners to understand population dynamics.

79. (A) The onset and progression of population ageing.
The median age is a summary statistic that indicates the exact midpoint of a population's age distribution. When this value rises over time, it means that the population as a whole is getting older. This trend is a clear sign that a country is moving through the demographic transition, as birth rates fall and people live longer. Monitoring the median age helps planners anticipate future social and economic needs, particularly regarding healthcare and pension systems.

80. (B) P-4, Q-3, R-2, S-1
Various demographic and social events leave distinct marks on a population's age and sex structure. High birth rates naturally lead to a wide base in the population pyramid. Conversely, conflicts often result in a shortage of males in specific age groups. Labor-driven migration can leave some regions with fewer young men. Improvements in healthcare for seniors lead to a larger proportion of the population in older age groups. Analyzing these impacts is essential for accurate demographic modeling.

81. (B) Low birth and death rates, and a stable size.
A stationary population pyramid is characterized by relatively vertical sides, indicating that each age group is roughly the same size until older age. This shape reflects a society where birth and death rates have both declined and are in balance, leading to a stable population with little to no growth. This is typical of nations in the final stages of the demographic transition, where the focus of planning shifts toward maintaining services for a balanced age structure.

82. (A) The population aged 65 and above to the working-age population.
This specific ratio measures the potential economic burden placed on the productive segment of society by the elderly. By comparing the number of seniors to those in the labor force, analysts can assess the sustainability of social security and healthcare systems. As this ratio rises, it indicates that fewer workers are available to support each retiree. This information is critical for governments planning for an ageing population and for ensuring long-term financial stability for older citizens.

83. (B) b, d, and e only
India's demographic landscape is marked by significant regional diversity. Southern states have generally moved faster through the demographic transition, exhibiting lower birth rates and an older population profile compared to other regions. There are also vast differences in how densely people live across various states. Additionally, the rapid tempo of urbanization has led to the growth of massive metropolitan hubs. Recognizing these varied trends is essential for state-specific planning and for understanding the country's complex social and economic dynamics.

84. (D) Sex ratio refers to total population, while sex ratio at birth refers to newborns.
While both indicators measure the balance between males and females, they apply to different segments of the population. The overall sex ratio is a cumulative measure reflecting the entire living population, influenced by birth patterns, mortality differences, and migration. In contrast, the sex ratio at birth is a specific statistic that tracks the gender balance of newborns. It is particularly useful for identifying social interventions like sex-selective practices, as it focuses on the very beginning of life.

85. (A) Both A and R are true and R is the correct explanation of A.
The transition toward an older population structure creates significant financial pressure on public support systems. As the proportion of retirees grows while the share of workers shrinks, there are fewer individuals contributing taxes or pension payments relative to those receiving benefits. This declining ratio threatens the long-

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129. (B) The degree of inequality in a frequency distribution.
This graphical tool is used to visualize the degree of evenness or concentration within a population or resource. By comparing the actual distribution to a line of perfect equality, it provides a clear sense of regional disparities. This method is indispensable for geographers and economists who need to assess the spatial balance of population and evaluate the impact of policies aimed at achieving more equitable distribution and regional development across different geographical units.

130. (C) A is true but R is false.
Understanding the makeup of a population is essential for national planning because different groups have very different needs and contributions. Children require education and healthcare, while the working-age cohort provides labor and tax revenue. The elderly often need specialized medical services and social support. Effective public policy must recognize these diverse requirements rather than assuming a uniform population. Strategic resource allocation depends on an accurate analysis of these varying demographic and socio-economic characteristics across all cohorts.

131. (C) Changes in population characteristics across space and over time.
The study of population dynamics involves examining how both the location and the numeric profile of people shift. Spatial changes focus on where people live and how they are redistributed across different regions. Temporal changes track how population size and composition evolve over years and decades. Together, these perspectives provide a complete picture of demographic evolution, helping researchers and planners understand historical trends and prepare for the future needs of a changing society.

132. (D) Deviations from the natural norm can indicate social interventions like sex-selective practices.
Biologically, the ratio of boys to girls at birth remains relatively constant across human populations. When this ratio significantly departs from the natural baseline, it often suggests that societal biases are influencing the outcome, such as through sex-selective medical interventions. Monitoring this indicator is crucial for identifying areas where gender-based discrimination exists and for implementing policies that promote gender equality and protect the rights and well-being of all children from the moment of birth.

133. (C) Half the population is older than 45 and half is younger.
The median age is a robust summary statistic that identifies the exact middle of a population's age structure. It splits the total number of individuals into two equal groups based on their age. A high median age indicates an older, more mature population, while a low value signifies a youthful society. This measure is essential for planners to understand the general demographic profile and to anticipate the social and economic needs of the population.

134. (B) Differences in historical fertility and mortality patterns.
The visual profile of a population is primarily a reflection of its history of births and deaths. Developing nations often have higher fertility, resulting in a wide-based pyramid. In contrast, developed nations have experienced long periods of low birth rates and high life expectancy, leading to more vertical or columnar structures with larger elderly cohorts. These historical demographic paths define the current age-sex structure, making it a powerful tool for understanding national development and planning for future needs.

135. (D) a, b, c, and d
A variety of social norms and values significantly influence a population's demographic structure. The age at which people marry and their cultural attitudes toward family size directly impact fertility rates. Additionally, the social status of women and specific gender preferences can skew the sex ratio and age balance. Recognizing the multi-faceted influence of these social and cultural factors is essential for a complete demographic analysis and for formulating public policies that address root causes of demographic imbalances.

136. (A) Both Statement I and Statement II are correct.
Theoretical models in urban geography provide an ideal pattern for city sizes, but real-world systems often show significant variations. Many

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need to relocate to achieve an even distribution. Correctly interpreting these values is essential for researchers and urban planners who analyze social divisions and aim to promote inclusive and equitable residential patterns.

93. (C) A broad range of support including financial, instrumental, and emotional help.
Care for the elderly within a family context is multifaceted. It involves not only financial assistance but also help with daily physical tasks and the provision of emotional companionship to prevent loneliness. This comprehensive network of support is vital for the well-being of seniors, particularly in societies where formal social security systems are less developed. Understanding the different types of family support is essential for creating public policies that complement and strengthen these traditional informal caregiving systems.

94. (D) Spatial changes in population distribution.
The movement of individuals from rural areas to urban centers is a primary way that the geographic arrangement of a population shifts over time. This redistribution is driven by economic opportunities and the concentration of services in cities. It leads to the growth of metropolitan areas and a corresponding decline in the share of the population living in the countryside. Analyzing these spatial changes is fundamental for urban planning, resource allocation, and understanding the social transformations within a nation.

95. (A) P-2, Q-3, R-1, S-4
Demographic profiles vary across countries based on their stage of development. Nations with high fertility have pyramids with wide bases. Conversely, many European countries have constrictive pyramids and high old-age dependency ratios due to advanced ageing. Countries with large youth populations have a high potential for a demographic dividend if they can provide employment. Understanding these diverse profiles is essential for comparative demographic analysis and for tailoring international development strategies to the specific needs of different nations.

96. (B) It is a permanent phenomenon once a country achieves it.
This demographic opportunity arises from a temporary shift in the age structure where workers outnumber dependents. However, as this large workforce eventually ages and retires, the window of opportunity closes, and the country enters a phase of population ageing with higher dependency. To benefit from this dividend, a nation must make strategic investments in health, education, and job creation during this finite period. Realizing these gains requires proactive planning and a clear understanding of the transition's transient nature.

97. (B) Erosion of traditional multi-generational family support systems.
Social transformations like urbanization and migration are changing how families care for their older members. As younger people move to cities for work, many elderly individuals are left behind, leading to a decline in the traditional system of co-residence and mutual aid. This erosion of informal support creates new vulnerabilities for the aged and necessitates the development of formal social security and community-based care systems. Addressing this issue is a priority for policymakers in many rapidly developing nations.

98. (C) a, b, c, and e only
Analyzing how humans are spread across a territory involves a range of statistical and graphical methods. Tools like the Gini ratio, the Lorenz curve, and the Rank-size rule focus on the hierarchy and inequality of distribution. The Dissimilarity Index specifically measures segregation between groups. In contrast, the child-women ratio is a demographic indicator that serves as a proxy for fertility, not for the spatial arrangement or concentration of the population. Selecting the correct tools is essential for accurate spatial analysis.

99. (C) South Asia, East Asia, and Western Europe.
Human populations are not spread evenly across the globe but are clustered in specific regions that offer favorable environmental and economic conditions. Fertile river valleys, coastal areas, and major industrial hubs in Asia and Europe support some of the world's highest population densities. Conversely, extreme environments like the polar

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A large, localized bulge in young adult males is frequently the result of people moving into a region for work, especially in industries that primarily employ men, such as construction or mining. This inward migration distorts the local sex ratio and age structure. Identifying these anomalies is crucial for planners who must provide infrastructure and services that match the specific needs of a transient or specialized workforce.

115. (C) A is true but R is false.
The total dependency ratio is a vital indicator that measures the overall support burden on the working-age population. It is calculated by adding the number of children and the elderly and comparing them to the productive group. Contrary to common misconceptions, it includes both young and old dependents. This comprehensive measure provides a clear picture of the social and economic demands placed on workers, helping governments plan for education, healthcare, and pension systems effectively for all ages.

116. (B) Shape of their respective age-sex pyramids.
The graphic profile of a population reveals its demographic history and current stage of development. Many developing nations have pyramids with wide bases, reflecting high birth rates and a young population. In contrast, developed countries often have more vertical or columnar structures, indicating low birth rates and a significant proportion of elderly citizens. These distinct shapes provide immediate visual information about future growth potential, labor supply, and the differing social needs of societies at various stages of transition.

117. (B) Historical patterns of settlement and cultural affinity.
Where people choose to live is often influenced by factors beyond simple economics or physical geography. Long-standing cultural traditions, shared language, and historical social ties can create strong communities in specific regions. These social factors lead people to settle near those with whom they share a common heritage or background. Recognizing the influence of cultural affinity is essential for a comprehensive understanding of population distribution and the social factors that maintain stable settlement patterns over generations.

118. (A) The speed at which a country's population is becoming urban.
Urbanization is the process where a growing share of a population resides in cities and towns. The tempo of this process specifically measures the velocity or rate of this change over a given time. This rate is critical for planners because a rapid tempo requires fast investment in urban infrastructure, housing, and public services to manage the influx of residents and ensure sustainable development. It provides a dynamic view of social and spatial redistribution within a country.

119. (C) Population is highly concentrated in a few locations.
This statistical index measures the degree of inequality in a spatial distribution. When the ratio is close to one, it indicates that a vast majority of the population is crowded into a very small area, while large portions of the land remain sparsely inhabited. This high level of concentration often highlights regional imbalances and the dominance of major urban centers. Understanding these patterns is essential for geographers and planners seeking to achieve more balanced regional growth.

120. (C) a, b, and c only
India is currently experiencing significant demographic shifts, including a massive total population that is projected to grow, although the growth rate itself is slowing down. There is also great diversity in health and birth indicators across different states. However, historically, the sex ratio has often been unfavorable to women due to various social biases. Understanding these complex and sometimes contradictory trends is essential for national planning and for addressing the diverse needs of the country's vast population.

121. (C) Financial dependency due to lack of adequate pensions or savings.
As individuals retire from the workforce, their economic security depends on their previous savings and available social support systems. In many societies, a lack of universal pension coverage or insufficient personal assets leads

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107. (D) Women have a higher life expectancy, leading to more females in older age.
In most populations, women tend to live longer than men due to both biological and environmental factors. As a result, the sex ratio among the elderly typically becomes increasingly skewed toward females at older ages. This phenomenon means that a significant majority of the very old are women, many of whom may face unique challenges related to widowhood and financial security. Recognizing this trend is essential for designing gender-sensitive healthcare and social support policies for the senior population.

108. (B) 2, 1, 3, 4
The demographic transition begins with a fall in mortality, particularly among infants, which initially increases the youth population. Subsequently, fertility rates start to decline, which slows growth and begins to change the age structure. As more people survive to older ages due to increased longevity, the elderly proportion rises. Finally, the population reaches a stage where seniors may outnumber children. This logical progression helps demographers categorize nations according to their demographic maturity and plan for future social needs.

109. (C) To understand the variations in speed and intensity of ageing across states.
India is a demographically diverse nation where different regions are moving through the demographic transition at different rates. Some states, particularly in the south, are ageing more rapidly than others due to faster declines in fertility and higher life expectancy. Studying these variations is essential for state-level planning, as it allows for the development of targeted policies that address the specific social, health, and economic needs of the elderly in different parts of the country.

110. (A) P-2, Q-4, R-1, S-3
Understanding population requires analyzing both its composition and how it moves across time and space. Temporal changes track shifts over years, while spatial changes focus on where people are located. The age-sex structure reveals the balance of generations and genders. The demographic dividend represents a period of economic opportunity when the working population is large. Together, these concepts provide a comprehensive framework for studying demographic dynamics and their implications for social and economic development.

111. (A) Cause: Improved sanitation and healthcare; Effect: Decline in mortality rates.
Demographic shifts are often driven by improvements in living standards and medical interventions. When a society invests in better sanitation, clean water, and access to healthcare, the risk of disease and death decreases, leading to a significant fall in mortality rates. This causal link is a fundamental part of the demographic transition and is a primary driver of population growth and eventual ageing. Recognizing these relationships is essential for understanding how social progress influences the numeric profile of a population.

112. (B) Declining fertility and increasing life expectancy.
A population becomes older through two primary demographic processes. A fall in birth rates reduces the proportion of young people, narrowing the base of the pyramid. Simultaneously, improvements in medical care and living conditions allow more individuals to survive into old age, widening the top. Together, these shifts increase the median age and the share of elderly persons in society. Understanding these dual drivers is essential for planners who must address the long-term social and economic impacts of ageing.

113. (A) a, b, c, and d only
India's demographic landscape is characterized by significant regional disparities. Northern states often have higher birth rates, while southern states like Kerala are further along in the demographic transition toward an older population. This means the demographic dividend window will likely remain open longer in the north. Additionally, some prosperous regions face the social challenge of an adverse child sex ratio. Recognizing these diverse trends is essential for effective national and state-level social and economic planning.

114. (A) Sex-selective in-migration of male laborers.
Asymmetries in a population pyramid often reflect specific historical or economic events.

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regions or vast deserts remain sparsely inhabited. Identifying these major clusters is fundamental for understanding global trade patterns, resource consumption, and the challenges of managing large metropolitan populations worldwide.

100. (A) Both A and R are true and R is the correct explanation of A.
In regions where official birth registration is incomplete, demographers often use the ratio of young children to women of reproductive age to estimate fertility levels. This measure is a useful proxy because it compares the outcome of recent births to the population that was at risk of giving birth. It provides a clear indication of reproductive trends over the past few years. Using such indicators is essential for understanding population growth dynamics in various historical and contemporary social contexts.

101. (C) The number of men compared to the number of women in a population.
Sex structure describes the numeric balance between the male and female components of a society. It is a fundamental demographic characteristic that influences the potential for future growth, the labor market, and various social dynamics. This structure is shaped by birth ratios, mortality differences, and gender-specific migration patterns. Analyzing these proportions is essential for planners to understand the specific needs of both genders and to identify potential social imbalances that may require targeted policy interventions.

102. (B) Lorenz Curve
Visualizing the degree of unevenness in a distribution is often done using a graph that plots cumulative percentages. By comparing the distribution of a population against a perfectly equal diagonal line, this curve provides a clear visual sense of how concentrated people are in specific areas. This graphical representation is essential for geographers and economists to identify regional disparities and to evaluate the effectiveness of policies aimed at promoting more balanced development and equitable resource distribution.

103. (D) A higher proportion of older people.
Most advanced nations have completed the demographic transition, leading to low birth rates and long life expectancies. This shift naturally results in an age structure with a larger percentage of elderly citizens compared to younger cohorts. This demographic maturity presents unique social and economic challenges, such as the need for specialized healthcare and sustainable pension systems. Understanding this profile is essential for comparative demographic studies and for planning for the future of societies with mature age structures.

104. (A) High rates of youth unemployment.
As societies age, they face specific challenges related to their older members, such as ensuring geriatric health, providing age-friendly urban spaces, and preventing social isolation. These emerging issues are directly linked to the needs and vulnerabilities of the elderly. While youth unemployment is a serious economic and social problem, it is not considered an issue specifically related to the aged. Distinguishing between the needs of different age cohorts is essential for creating comprehensive and effective social welfare policies.

105. (C) Population ageing
The transition toward an older society is indicated by several consistent demographic shifts. These include a rising median age, falling fertility rates, and a growing proportion of seniors relative to workers. Visually, this is represented by a pyramid that narrows at the base and widens at the top or middle. Collectively, these indicators signal that a population is maturing, which necessitates adjustments in public policy, particularly concerning the financial sustainability of support systems and the provision of healthcare.

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106. (C) Statement I is incorrect, but Statement II is correct.
Population density is a simplified measure that spreads the total number of people evenly over a whole area. While it provides a basic ratio, it fails to show internal patterns where most people might be clustered in a small city while leaving the rest of the land empty. Therefore, it can be misleading when used alone to describe spatial distribution. More sophisticated tools like concentration ratios are needed to reveal the true degree of clustering and regional disparities.

to significant financial vulnerability for the aged. This economic dependency often requires them to rely on family members or government aid for basic needs. Addressing these financial challenges is a core part of planning for an ageing population and ensuring social stability and well-being.

122. (A) Statement I and Statement II are both true and Statement II is a direct consequence of Statement I.
Population ageing is the natural outcome of a country moving from high to low birth and death rates. As more people survive to old age and fewer children are born, the overall balance of the population inevitably shifts toward older age cohorts. This fundamental demographic transition changes the age structure permanently. Understanding this process is essential for policymakers to anticipate the long-term requirements for healthcare, pensions, and social services in a maturing and changing society.

123. (C) Burden on the working-age population to support the younger population.
This demographic ratio quantifies the social and economic responsibility placed on the productive segment of society to care for its youth. By comparing the number of children under fifteen to the working-age cohort, analysts can assess the demand for primary education, pediatric healthcare, and other services for the young. A high ratio indicates that a large portion of national resources must be dedicated to the development and well-being of the next generation.

124. (D) Gini's concentration ratio
Quantifying how a population is clustered across space requires specific statistical measures. This ratio, derived from the Lorenz curve, provides a single numeric value that indicates the degree of inequality in spatial distribution. Unlike measures of mortality or life expectancy, which focus on vital events, this tool is designed to show the extent to which people are concentrated in a few areas versus being spread evenly across a territory. It is foundational for geographic and regional analysis.

125. (B) P-3, Q-4, R-1, S-2
Demographic processes have specific and predictable impacts on a population's profile. Falling fertility narrows the base of the pyramid, while increased life expectancy adds to the proportion of the very old at the top. Migration from villages to cities increases the pace of urbanization. Meanwhile, certain social practices can significantly distort the gender balance among newborns. Recognizing these cause-and-effect relationships is essential for understanding how demographic shifts change the social and economic fabric of a nation.

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126. (B) The proportion of the working-age population (15-64) is at its peak.
This phase represents a specific window of economic opportunity within the demographic transition. It occurs when a country has many workers relative to children and the elderly. This low dependency ratio allows for increased productivity, savings, and investment. However, this period is temporary and its benefits are only realized if the government implements effective policies in education, health, and the labor market. Strategic planning is required to utilize this large productive workforce for sustainable development.

127. (A) Literacy rate
The age composition of a population is primarily shaped by the core demographic events of birth, death, and migration. These processes directly determine how many people enter or leave different age cohorts. In contrast, while literacy is a critical social indicator that reflects human development and can influence demographic behavior over time, it does not directly add or subtract people from the population structure in the way that fertility, mortality, and movement do in a society.

128. (B) b, c, d, and e only
Ageing is a multi-dimensional process that goes beyond biological changes to include significant social and economic shifts. It involves evolving family support patterns and varying levels of financial security among seniors. Additionally, a larger elderly population increases the demand for healthcare due to chronic illnesses. In many cultures, the responsibility for care often falls more heavily on certain family members. Understanding these social dynamics is essential for creating effective and equitable support systems for an older population.

workers. A low total dependency ratio minimizes the resources needed for support and allows for greater investment in development and savings. However, capturing this dividend requires strategic public policies that ensure education and productive employment for the large workforce.

144. (D) The effect of declining fertility, which narrows the base of the pyramid.
This component of population ageing is driven by a reduction in the number of births. As fertility falls, the youngest cohorts in the population become smaller, causing the base of the age-sex pyramid to shrink. This results in an immediate increase in the relative proportion of older age groups. Understanding this process is essential for demographers because it represents the beginning of the structural shift toward a more mature population, with long-term implications for future growth.

145. (B) a, c, and d only
Population density is a standard metric calculated by dividing the total population by the total land area. It provides a crude but useful measure of how crowded or sparse a population is within a unit of area. While it assumes an even distribution and can mask local clustering, it remains a fundamental tool for comparing population concentration across different territories. Expressed in persons per square kilometer, it is indispensable for basic spatial analysis and infrastructure planning.

146. (A) Both Statement I and Statement II are correct and Statement II is an example of Statement I.
Migration patterns are often gender-specific, which can significantly alter the demographic balance of both the source and destination regions. When a large number of young men leave a rural area to find work in cities, the remaining population will have a higher proportion of females. This shift in the sex ratio has important social and economic consequences for the home community. Analyzing these effects is essential for understanding the broader impacts of labor migration on regional demographics.

147. (B) Increase in urbanization
Population ageing is the result of three specific demographic processes. A fall in birth rates reduces the youth population, while increased life expectancy adds to the elderly cohort. Additionally, migration can shift the age balance of a region. While urbanization is a critical social process involving the redistribution of people, it does not directly drive the structural change toward an older population in the same fundamental way that changes in fertility, mortality, and movement between cohorts do.

148. (A) It influences the size and characteristics of the labor force.
The age and sex composition of a population is a primary determinant of its economic potential. The proportion of individuals in the working-age group defines the available labor supply, while their gender and age profile can influence productivity and specialized skills. This information is critical for economic planners to anticipate future workforce trends, plan for job creation, and ensure the sustainability of social security systems. Demographic structure thus serves as a foundation for long-term national economic strategy.

149. (C) A growing proportion of elderly people to be supported by the working-age population.
A rising old-age dependency ratio signifies that the number of retirees is increasing relative to the number of people in the productive age group. This shift places greater pressure on workers to provide the financial and social support needed for the aged, including funding for pensions and specialized medical services. Recognizing this trend is essential for governments to plan for sustainable social security models and to ensure the well-being of the elderly in a maturing society.

150. (A) 1, 4, 2, 3
Analyzing how people are clustered involves a logical sequence of statistical and graphical steps. The process begins with basic density calculations for different areas, which are then ranked. These values are used to construct a visual representation through a Lorenz Curve. Finally, the Gini ratio is calculated to provide a precise numerical measure of the degree of concentration. Following this path allows researchers to accurately quantify regional disparities and understand the spatial organization of a population.

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countries feature a single primate city that is disproportionately larger than any other urban center, often as a result of concentrated economic and political power. This deviation from the Rank-Size Rule reveals important information about a nation's spatial organization and history. Understanding these patterns is essential for geographers and planners seeking to achieve more balanced development.

137. (C) The pressure on public finance due to pensions and healthcare costs.
The shift toward an older population profile creates significant fiscal challenges for a nation. As more people reach retirement age and face chronic health conditions, the demand for public spending on pensions and specialized medical services increases. This occurs while the relative share of the working population, which provides tax revenue, may be shrinking. Addressing these economic impacts is a major priority for governments seeking to ensure the long-term sustainability of their social support and health systems.

138. (D) Child-Women Ratio
This indicator is used as a common proxy for fertility levels, especially in regions with incomplete birth registration data. It relates the number of children under age five to the total number of women in the reproductive age group. A higher ratio indicates a history of higher birth rates in the recent past. This statistic provides essential insights into reproductive trends and early childhood survival, helping researchers compare demographic behavior across different regions and time periods for planning.

139. (A) The southern states like Kerala and Tamil Nadu are in a more advanced stage of ageing.
India's demographic transition is occurring at different speeds across its vast territory. Southern states have achieved faster declines in birth rates and significant improvements in life expectancy, leading to an older population structure than other regions. In contrast, many northern states still maintain younger profiles with higher fertility. Recognizing these regional variations is critical for effective state-level planning, particularly regarding the development of healthcare services and social security systems for the growing elderly population.

140. (A) Both A and R are true and R is the correct explanation of A.
In many nations, traditional family networks remain the primary source of support for the elderly. This is often a necessity because formal state-provided systems, such as universal pensions and specialized geriatric care, may be underdeveloped or provide limited coverage. Therefore, the physical, emotional, and financial well-being of seniors depends heavily on their relatives. Recognizing this reliance is essential for policymakers aiming to design programs that support and strengthen these informal caregiving networks while expanding formal security options.

141. (B) Gini's Concentration Ratio
Both of these statistical tools are designed to quantify the degree of inequality or concentration within a distribution. While they may use different mathematical formulas, they share the same objective of measuring how much a given arrangement deviates from a state of perfect equality. These measures are foundational for spatial and demographic analysis, allowing researchers to compare disparities in population or resources across different regions and time periods using a precise and standardized numeric scale.

142. (A) Vast diversity in terms of demographic, social, and economic characteristics.
India is a nation of immense regional variety, which is reflected in its population profile. Different states and ethnic groups exhibit distinct patterns of birth, death, and migration, as well as varying levels of education and economic development. This heterogeneity means that a single national average often masks significant local differences. Understanding this vast diversity is essential for effective and equitable planning, as it allows for the creation of policies that address the specific needs of different regions.

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143. (C) A low child dependency ratio and a low old-age dependency ratio.
The potential for accelerated economic growth occurs when a high proportion of the population is in the productive age group. This situation is most favorable when the number of children and the elderly is small relative to the number of

term sustainability of traditional social security models. Governments must therefore explore innovative policy solutions, such as raising retirement ages or promoting private savings, to ensure the continued well-being of their elderly citizens.

86. (B) Rural-to-urban migration.
The speed at which a population becomes more urban is primarily influenced by the movement of people from the countryside to cities. This migration is often driven by the search for better employment, education, and healthcare. While natural increase and reclassification also play roles, the influx of migrants is usually the most significant and immediate factor that accelerates the level of urbanization. Understanding these movement patterns is critical for urban planners who must manage rapid city growth and infrastructure demands.

87. (D) A very high degree of concentration in a few areas.
This statistical value provides a precise measurement of the degree of inequality in a distribution. A ratio close to one indicates that a vast majority of the population is concentrated within a very small portion of the total land area. This pattern often reveals significant regional imbalances and the dominance of a few major metropolitan hubs. Analyzing these levels of concentration is essential for geographers and planners who seek to understand spatial disparities and promote more balanced regional development.

88. (A) Determine the level and type of family and community support available.
For elderly individuals, their living situation is a primary determinant of their physical and emotional well-being. By studying whether seniors live alone, with their children, or in institutional settings, policymakers can identify who is most at risk of isolation or lack of care. This information is vital for designing targeted social services, community outreach programs, and healthcare interventions. Understanding these arrangements allows for the creation of more effective support networks that cater to the diverse needs of the aged.

89. (C) The societal norms regarding the age of marriage and childbearing.
Culture significantly influences the biological processes that define a population's age structure. In societies where early marriage and large families are the norm, birth rates tend to be higher, resulting in a youthful population pyramid with a wide base. Conversely, a shift toward later marriage and smaller families contributes to a more mature age profile. Recognizing these cultural drivers is essential for accurate demographic forecasting and for the development of social policies that respect and address traditional values.

90. (B) a, b, and c only
Global gender balance is influenced by biological and social factors. While more males are born, females tend to have a higher life expectancy, leading to their predominance in older age groups. Additionally, labor-driven migration can significantly skew the sex ratio of specific regions. While the overall population ratio tends to move toward balance, it is rarely exactly equal due to these persistent differences in mortality and movement. Analyzing these patterns is essential for understanding demographic health and social equity worldwide.

91. (D) The long-term decline in fertility rates.
Although improvements in life expectancy contribute to an older population, the most fundamental driver of population ageing is a sustained reduction in the number of births. When fewer children are born, the overall proportion of young people decreases, which naturally increases the relative share of the elderly. This shift at the base of the population pyramid creates a permanent change in the age structure. Understanding this primary cause is essential for planning long-term responses to the challenges of an ageing society.

92. (C) Statement I is correct, but Statement II is incorrect.
The Distribution-Dissimilarity Index is a statistical measure where a value of zero indicates perfect integration, meaning the groups are distributed identically across spatial units. Conversely, a value of one (or one hundred percent) represents complete segregation. It quantifies the proportion of a group that would

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151. (C) Sex-selective abortion.
While many demographic events affect both age and gender, some social interventions specifically target one sex. The practice of preventing female births leads to an immediate and significant imbalance in the sex ratio at birth, with long-term consequences for the gender structure of subsequent cohorts. Unlike a general decline in fertility or changes in mortality, which affect both sexes, this practice directly distorts the numeric balance between males and females from the very beginning of life.

152. (B) Instrumental support (help with daily tasks)
Support for the elderly within a family setting is traditionally categorized into financial aid, physical help with daily chores, and emotional companionship. These roles are essential for the well-being of seniors. While political lobbying is an important social activity, it is not typically considered a form of direct family support in demographic or sociological studies. Understanding the core types of support is essential for identifying the needs of the aged and for designing effective community and state programs.

153. (D) A historical event causing high mortality or emigration, such as a war or famine.
Sharp indentations in a population pyramid correspond to specific historical periods where a particular age group experienced unusual loss. This could be due to massive numbers of deaths during a conflict or natural disaster, or a sudden out-migration of people. These "bites" reveal the long-term demographic impact of past crises. Analyzing these patterns allows researchers to understand a society's history and to anticipate the future social needs of cohorts that have been significantly reduced in size.

154. (A) Rank-Size Rule
This theoretical model describes a common hierarchical pattern in the population size of cities within an urban system. It suggests that the population of any given city is inversely related to its rank, so the second-largest city is half the size of the first. This concept provides geographers with a framework to evaluate the balance and maturity of a country's spatial organization. Deviations from this rule can reveal concentrated political or economic power in a primate city.

155. (C) Population density is highest in the interiors of large continents like Africa and Australia.
Human settlement patterns globally show a strong preference for coastal regions and fertile river valleys which offer better resources and trade links. In contrast, the interiors of massive continents often feature harsh environments, such as vast deserts or dense forests, that support only sparse populations. Identifying these patterns of concentration and dispersion is essential for understanding global demographic dynamics and for planning infrastructure and resource management in increasingly crowded coastal and metropolitan areas worldwide.

156. (B) Statement I is incorrect, but Statement II is correct.
A demographic dividend is a potential opportunity for growth, not a guaranteed result. Having a large number of young workers only benefits a nation if they are healthy, well-educated, and can find productive employment. Without proactive policies to utilize this potential, a large youth population can become a source of social and economic strain. Therefore, realizing these gains requires strategic government investment in human capital and a stable economic environment that fosters job creation and innovation.

157. (D) Demographic transition.
Most countries are moving through a multi-stage process characterized by shifts from high birth and death rates to low ones. Developed nations reached the final stages earlier, resulting in stable or shrinking populations with an older age structure. Many developing nations are currently in stages of rapid growth with younger profiles. These differing historical paths are the primary reason for the distinct shapes of population pyramids seen globally, making the concept of transition central to comparative demographic study.

158. (B) Cumulative percentage of population against cumulative area or income.
This visual tool is fundamental for analyzing the degree of inequality or concentration within a distribution. By plotting cumulative shares of two variables, it shows how much the actual distribution departs from a state of perfect equality. This method provides demographers and economists with a clear way to see regional

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development and early declines in birth rates have already developed older population profiles. These states face the challenges of ageing, such as rising healthcare demands and pension sustainability, earlier than others. Recognizing these regional leaders is essential for studying the progression of demographic maturity and for tailored state-level policy planning.

189. (C) International diplomatic protocols.
The numeric balance of age and gender in a society is a critical factor for many areas of domestic planning, such as schooling, healthcare, and labor market policy. Governments use this information to allocate resources effectively to meet the needs of different cohorts. However, the formal rules and traditions of international diplomacy are based on historical political relations and legal standards that are not directly influenced by a country's specific internal age or sex structure.

190. (B) a, b, and c only
Population ageing is driven by a structural shift where the elderly proportion grows while the youth share shrinks. This is primarily caused by falling birth rates and rising life expectancy. Additionally, migration patterns can influence the age balance of a region. Contrary to common misconceptions, an ageing population actually means that the proportion of young people is decreasing. Understanding these core components is essential for planners to anticipate the long-term social and economic needs of an older society.

191. (A) A recent history of high fertility.
This indicator compares the number of very young children to women of reproductive age, serving as a useful proxy for birth rates. A high ratio signifies that there have been many recent births relative to the potential mother population. It provides demographers with a clear sense of population growth momentum and reproductive trends, especially when detailed registration data is missing. Using this measure is essential for analyzing historical demographic shifts and comparing fertility across different regions.

192. (B) Comparing the population density of Mumbai with that of Chennai in 2011.
A spatial comparison focuses on how a particular population characteristic varies between different geographic locations at a single point in time. By examining the crowding levels of two separate cities, researchers can identify regional differences in settlement and urban concentration. This perspective is fundamental for understanding spatial distribution patterns and for planning infrastructure and resource allocation based on the specific needs and densities of various metropolitan areas or regions within a country.

193. (B) Assess the prevalence of pre-natal sex selection.
The numeric balance between boys and girls at birth is naturally very stable. When this ratio significantly departs from the biological norm, it often indicates that social interventions, such as sex-selective medical practices, are taking place. Monitoring this specific indicator is critical for identifying areas where gender-based discrimination exists. It provides the evidence needed to implement policies and social awareness programs that promote the value of all children and protect their rights from the beginning of life.

194. (A) Availability of housing, employment, and amenities.
While physical geography sets the general stage, the specific details of where people live locally are primarily driven by human-made factors. The presence of jobs, suitable homes, and essential services like schools and hospitals act as powerful magnets for settlement. These practical economic and social factors determine the density and distribution of neighborhoods within a city or region. Understanding these drivers is essential for urban planners who seek to manage growth and provide high-quality living environments.

195. (A) P-2, Q-3, R-4, S-1
Demographic concepts are linked to specific social and economic realities. The demographic dividend offers a period of potential growth, while population ageing involves an increase in the median age. The Lorenz curve is a visual tool used to measure distribution inequality, and the sex ratio monitors the balance between

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166. (A) Both Statement I and Statement II are correct, and Statement II explains Statement I.
The visual profile of a population serves as a detailed record of its historical experiences. Unusual bulges often point to past periods of high fertility, while indentations can signal the long-term impact of wars, famines, or massive migrations. By analyzing these features, demographers can reconstruct a society's demographic past and anticipate how these historical events will influence future social and economic needs as different cohorts age. This graphic tool is indispensable for comprehensive demographic study.

167. (D) Chronic, degenerative, and non-communicable diseases.
As populations age, the primary health challenges shift from infectious conditions to long-term health issues associated with getting older. Conditions such as heart disease, diabetes, and various forms of cognitive decline become more prevalent, requiring specialized medical care and prolonged support. This epidemiological transition necessitates a significant reorganization of the healthcare system, with increased investment in geriatric medicine and chronic disease management to ensure the well-being and quality of life for an older population.

168. (A) Rank-Size Rule
This theoretical framework is used to examine the relationship between the population of cities and their standing within a national or regional urban system. It suggests a predictable hierarchy where city size is inversely proportional to its rank. By using this tool, geographers can evaluate whether an urban system is balanced or dominated by a single massive city. This analysis is critical for understanding spatial organization and for planning for more equitable regional development.

169. (C) A shrinking of the younger age cohorts and, eventually, population ageing.
When a society has very low birth rates for a long time, the number of children entering the population decreases. This leads to a narrowing at the base of the population pyramid and a reduction in the proportion of young people. Over decades, this shift naturally increases the relative share of the elderly, resulting in an older population structure. Understanding this process is essential for planning for future labor shortages and the sustainability of social support systems.

170. (A) Analyzing the increase in the percentage of India's urban population from 1951 to 2011.
Examining how a population characteristic changes over several decades allows researchers to identify long-term trends and societal shifts. In this case, tracking the rising share of people living in cities over a sixty-year period provides a clear example of temporal change in how a population is distributed. This perspective is essential for understanding the processes of development and for making informed predictions about future spatial and social transformations within a nation.

171. (D) Determining the national language of a country.
The numeric balance of age and gender in a population is a critical variable for many areas of public policy. It is used to forecast future growth, plan for schools and hospitals, and assess the economic potential of the labor force. However, while cultural and social planning is important, the choice of a national language is a political and historical decision that is not directly determined by the statistical distribution of age and sex cohorts.

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172. (B) Sex ratio in the older age groups.
Biological and social factors often lead to different survival rates for men and women. In most populations, women have a higher life expectancy, which becomes increasingly apparent as people get older. This leads to a significant female predominance in the oldest age cohorts. Recognizing this trend is essential for planners to address the specific healthcare, financial, and social needs of elderly women, who may be more likely to live alone or face unique economic vulnerabilities.

173. (C) Cumulative percentage of population and cumulative percentage of area.
Constructing this visual tool for spatial analysis requires two sets of cumulative data that show how a population is spread across different units of territory. By plotting these proportions against each other, researchers can see how far the actual

power. This extreme concentration disrupts the predicted hierarchical balance between cities. Understanding these primate systems is essential for geographers and planners who seek to understand spatial disparities and promote balanced regional growth.

203. (C) It highlights the diverse policy needs regarding job creation and elderly care.
India is a nation of immense regional demographic variation, where different states are at different stages of the demographic transition. Some areas are still youthful, while others are already facing the challenges of an ageing population. Studying these trends is essential because it informs state-level planning, allowing for the creation of targeted policies that address the specific labor market and healthcare needs of each region. Recognizing this diversity is a prerequisite for effective national development.

204. (D) Child-Women Ratio
While several indicators measure the burden placed on the productive population by non-working groups, others focus on reproductive trends. This specific ratio compares the number of very young children to the population of women in their reproductive years, providing a useful proxy for fertility levels. In contrast, dependency ratios specifically track the balance between workers and the young or old. Distinguishing between these measures is essential for a clear understanding of both population growth and social support needs.

205. (A) Demographic dependency on high birth rates.
For older adults, dependency is a complex experience involving the need for financial assistance, physical help with activities of daily living, and emotional connection with others. These factors define their reliance on family members and the state. While birth rates in the past influenced the size of their support network today, the term "dependency" for the elderly themselves describes their current need for care and support, rather than a biological requirement for more births in the population.

206. (A) Wide base and a narrow top.
The demographic profile of a society reflects its history of fertility and mortality. Many nations in the earlier stages of transition have high birth rates and high, though falling, death rates. This results in an age-sex pyramid with a very large proportion of children and a small percentage of seniors. This shape indicates a young population with high growth potential, which requires significant investment in education, child healthcare, and eventual job creation for the large upcoming workforce.

207. (C) The opportunities for trade, fishing, and commerce.
Human settlement patterns globally show a strong preference for coastal zones. These areas offer significant economic advantages, including access to international shipping routes, diverse marine resources, and thriving commercial hubs. These benefits act as powerful pull factors, attracting millions of people and leading to some of the world's highest population densities. Recognizing the economic primary of these regions is essential for understanding global demographic distribution and for planning sustainable development in increasingly crowded and vulnerable coastal environments.

208. (D) The ability of the economy to absorb and productively employ the workforce.
A demographic dividend is a potential opportunity for growth, not an automatic outcome. It occurs during a temporary window when the working-age population is large relative to its dependents. However, this large labor force can only boost the economy if there are enough jobs and if the workers are healthy and skilled. Strategic government investment in health, education, and a favorable business environment is required to turn this demographic shift into real and sustainable economic gains.

209. (B) It leads to a lower median age for the population.
Population ageing is the process where a society as a whole becomes more mature. This shift is characterized by an increase in the proportion of elderly residents and a corresponding rise in the median age, as the overall balance moves away from the younger cohorts. It is primarily driven by declining birth rates and improvements in life expectancy. This structural change brings significant new social and economic challenges

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181. (C) Green Revolution, which concentrated prosperity and population in certain regions.
Major economic and agricultural shifts can fundamentally redraw the map of human settlement. In India, the introduction of high-yielding crop varieties and improved irrigation led to significant increases in productivity in specific areas. This concentrated economic growth acted as a powerful pull factor, attracting people and resources and leading to higher population densities in those regions. Recognizing these economic drivers is essential for understanding historical patterns of population distribution and for planning future regional development strategies.

182. (A) A low child dependency ratio and a high old-age dependency ratio.
This demographic profile reflects a mature population structure typical of nations with very low fertility and high life expectancy. With few children relative to workers, the youth support burden is minimal. However, a large elderly cohort places significant pressure on the productive population for healthcare and pensions. Recognizing this balance is essential for governments to plan for the long-term sustainability of social security systems and to address the unique needs of an ageing society.

183. (D) Their social integration and potential vulnerability.
For older individuals, their household situation is a key determinant of their well-being and access to care. By examining whether seniors live with family, alone, or in care facilities, researchers can identify those who might be at risk of isolation or lack of physical support. This information is vital for designing community outreach programs, targeted healthcare services, and social safety nets. Understanding these living patterns allows for the creation of more effective and compassionate support systems.

184. (A) Rectangular or columnar structure.
Most advanced nations have moved through the demographic transition to a stage of low birth and death rates. This leads to a population pyramid where each age group is roughly equal in size until older age, creating a more vertical profile. This shape contrasts with the wide-based pyramids of younger societies and reflects a mature age structure with a large proportion of elderly citizens. Understanding this profile is essential for planning for stable populations and ageing societies.

185. (C) The measurable characteristics of a population, such as age, sex, and ethnicity.
This term refers to the detailed makeup of a society beyond simple population counts. It involves the analysis of various traits like gender balance, age distribution, and cultural background. These characteristics define the social and economic profile of a nation and determine its specific needs for public services like education and healthcare. Studying composition is fundamental for demographers and planners to understand the diversity within a population and to create targeted and effective social policies.

186. (A) Both Statement I and Statement II are correct.
This statistical index is a primary tool for quantifying residential segregation between two groups. It measures the degree of difference in their spatial distribution, indicating the percentage of one group that would need to move to achieve an even spread. High values signal significant separation, which is a major area of study for urban planners and sociologists. Understanding these patterns is essential for addressing social barriers and promoting more integrated and equitable metropolitan and regional environments.

187. (D) Social and economic aspects of ageing.
As populations mature, the relationships between different generations and the support required for the elderly become central themes. These concepts explore how seniors rely on their families and the state for financial, physical, and emotional care. They also address the challenges of ensuring the well-being of the aged in a changing social landscape. Analyzing these dynamics is essential for creating sustainable social security models, geriatric healthcare services, and community-based support systems for an older population.

188. (B) Kerala, Tamil Nadu, Goa
Demographic change in India is highly regional, with several states moving through the demographic transition much faster than the national average. Areas with high levels of social

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217. (C) Age-Sex Pyramid - Visualizes age/sex composition
This specialized graphic tool is fundamental for demographic analysis as it provides a snapshot of a society's composition at a glance. By displaying the population in age cohorts separated by gender, it reveals historical trends in births, deaths, and migration. The overall shape of the pyramid provides immediate insights into the demographic maturity of a society, helping planners to anticipate future growth and the differing needs of young, working, and elderly segments of the population.

218. (A) An increasing burden on the working-age population to support a growing elderly population.
This demographic ratio quantifies the potential social and economic responsibility placed on the productive segment of society by its seniors. A rising value indicates that there are more retirees relative to workers, which can strain pension funds and healthcare systems. Recognizing this trend is essential for governments to plan for sustainable social security models and to ensure the well-being of an ageing population. It signals the need for strategic adjustments in public policy and resource allocation for the future.

219. (D) Changing relationship between birth rates and death rates.
Global population size evolves over time primarily through shifts in the balance of vital events. When improvements in health and nutrition lead to a fall in mortality while birth rates remain high, the population grows rapidly. As societies move through the demographic transition and fertility also declines, the rate of growth slows down. Understanding these long-term temporal changes is essential for demographers and planners to analyze historical demographic trends and to project the future size of the human population.

220. (B) a, b, and c only
Understanding population requires the use of accurate summary statistics. The median age identifies the midpoint of the age distribution, and the sex ratio monitors the gender balance. The demographic dividend represents the potential economic gain from a favorable age structure with few dependents. However, population ageing is specifically defined as an increase in the proportion of elderly people, not just their absolute count. Correctly applying these concepts is essential for analyzing demographic maturity and its implications for social policy.

221. (C) Gini's Concentration Ratio
This specialized statistical index is the primary tool used to measure the degree of inequality or concentration in a spatial distribution. By providing a single numeric value between zero and one, it quantifies how much a given arrangement departs from perfect equality. This measure is fundamental for geographers and planners who need to identify regional disparities and evaluate the effectiveness of policies aimed at promoting more balanced development and equitable distribution of people or resources across various geographic units.

222. (A) Both Statement I and Statement II are correct, and Statement II provides an example for Statement I.
India is a nation of immense regional diversity, and this is clearly reflected in its demographic profile. Different states are at different stages of the demographic transition, with some already exhibiting an older structure typical of advanced development, while others maintain the high birth rates characteristic of an earlier phase. Recognizing these variations is essential for national planning, as it allows for the creation of targeted policies that address the specific social and economic needs of different regions.

223. (C) The numerator age group.
While both indicators use the working-age cohort as their common base for comparison, they focus on different dependent populations. One ratio uses the number of children under fifteen as its primary count, while the other uses the number of people aged sixty-five and over. By isolating these different groups, demographers can separately assess the demands for education and child health versus the requirements for pensions and geriatric care, providing more detailed information for social and economic planning.

224. (D) Traditional attachment to an ancestral village.
Human distribution is shaped by a variety of influences. Economic drivers attract people

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genders. Together, these measures provide a comprehensive framework for analyzing the structure and dynamics of a society, which is essential for effective national planning and development.

196. (B) The potential for future population growth and the demand for social services.
The numeric balance of age and sex cohorts is a fundamental driver of a nation's future trajectory. A large number of young people suggests continued growth, while an older profile changes the demand for public services like healthcare and social security. Additionally, the size of different groups dictates the requirements for education and employment. Analyzing this structure is essential for planners to anticipate these shifting needs and to allocate national resources effectively for sustainable development.

197. (D) India has a relatively young population, which provides the basis for the demographic dividend.
A large proportion of the people in India are currently in their productive years, creating a major economic opportunity for accelerated growth. This youthful age structure results from historical birth and death trends. However, this advantage is not permanent, and capturing its benefits requires significant investment in health, education, and job creation for the large workforce. Strategic planning is essential to utilize this temporary demographic window effectively for the nation's long-term prosperity and social stability.

198. (A) The degree of unevenness in the spatial distribution of population.
These specialized tools are used to visualize and quantify how concentrated a population is across different geographic units. By comparing the actual spread of people to a line of perfect equality, researchers can identify regional disparities and areas of high concentration. This analysis is fundamental for geographers and planners seeking to achieve more balanced development and equitable resource distribution. It provides a standardized and clear numeric measure of spatial inequality within a given territory.

199. (C) The impact of migration of younger family members, leading to care deficits.
Globalization and economic shifts often drive younger generations to move far from home for better opportunities. This redistribution of the workforce leaves many elderly individuals without their traditional family support network nearby. This can lead to a significant gap in daily care and social interaction, creating new vulnerabilities for the aged. Addressing these care deficits is a priority for policymakers who must develop new formal and community-based support systems to replace or complement traditional family care.

200. (A) 3, 2, 1, 4
The demographic transition follows a predictable path that changes the age structure of a nation. It begins with falling death rates, which initially fuels rapid growth and a large youth population. As birth rates subsequently fall, a temporary window of economic opportunity opens with many workers and few dependents. Eventually, this large working cohort ages, and the society must face the challenges of an older population structure. This sequence helps demographers categorize and plan for national development.

201. (D) Societal norms regarding the ideal age for marriage.
Cultural traditions and collective values play a primary role in shaping the biological characteristics of a population. In communities where social norms favor early marriage, birth rates tend to be higher, which naturally results in a more youthful age structure with a wider base. Recognizing the influence of these social and cultural factors is essential for a complete demographic analysis and for formulating public policies that address traditional values while promoting sustainable development and individual well-being.

202. (A) Both Statement I and Statement II are correct, and Statement II explains Statement I.
Theoretical models like the Rank-Size Rule provide an ideal pattern for urban systems, but real-world geography often features significant deviations. Many countries have a single primate city that is overwhelmingly larger than any other, concentrating a vast majority of the nation's political, economic, and cultural

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distribution deviates from perfect equality. This method is fundamental for identifying regional concentration and concentration disparities. It provides a clear and standardized way to evaluate spatial balance and the impact of regional development policies over time.

174. (D) The sex ratio will become skewed towards females (more females per 1000 males).
When economic factors drive many young men to move away from their home region for work, the demographic balance of the remaining population is significantly altered. The loss of a specific male cohort naturally results in a higher proportion of women among those who stay behind. This shift in the sex ratio can have profound social impacts on family structures and local community dynamics. Analyzing these effects is essential for understanding the broader consequences of labor migration.

175. (D) a, b, c, and d
Human distribution is the result of a complex interplay between various physical, economic, social, and political drivers. Natural features like climate and water set the foundation, while economic opportunities in industrial hubs attract concentrated populations. Additionally, cultural ties and governmental policies can intentionally or accidentally shift where people choose to settle. Recognizing the multi-dimensional nature of these influences is essential for accurate spatial analysis and for the implementation of effective regional planning and development strategies.

176. (A) Both Statement I and Statement II are correct.
The median age is a fundamental demographic summary statistic that identifies the exact middle point of a population's age structure. By splitting the population into two numerically equal halves, it provides a clear sense of whether a society is youthful or maturing. A rising median age over time is a definitive indicator that a population is getting older. This measure is essential for planners to anticipate the changing demands for public services, healthcare, and financial security systems.

177. (B) The Gini's concentration ratio of a population.
The population pyramid is a graphic tool specifically designed to visualize the internal composition of a society by age and gender. It is excellent for identifying the long-term impacts of historical events and for projecting future growth and dependency. However, quantifying the degree of spatial inequality or concentration requires different statistical tools, such as the Lorenz curve and the Gini ratio. Distinguishing between these tools is essential for accurate demographic and spatial analysis of a population.

178. (A) A period of unprecedentedly rapid growth.
Over the past two centuries, the world has experienced a dramatic increase in the total number of people. This temporal change was driven by significant declines in mortality rates due to medical advances and better nutrition, while birth rates remained high for an extended period. This surge has led to massive social, economic, and environmental transformations globally. Understanding this historical growth is essential for analyzing modern demographic patterns and for planning for the challenges of a larger human population.

179. (C) A potential economic benefit arising from a favorable age structure.
This concept refers to a window of opportunity for accelerated economic growth that occurs when a country's working-age population is large relative to its dependents. This shift in age structure can lead to increased productivity and higher savings. However, these benefits are not automatic and require strategic investments in human capital, health, and the labor market. Capturing this dividend is a major goal for many developing nations currently in this stage of demographic transition.

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180. (A) P-4, Q-3, R-1, S-2
Various demographic tools provide unique insights into a population's characteristics. The Gini ratio quantifies spatial inequality, while the dependency ratio measures the economic burden of non-productive groups. The sex ratio monitors the balance between males and females, and the median age identifies the midpoint of the age distribution. Together, these measures offer a comprehensive framework for understanding the social, economic, and spatial structure of a society, which is essential for effective national planning.

that require proactive planning and specialized geriatric and pension systems.

210. (D) a, b, c, and d
The dependency ratio is a vital indicator that compares the non-productive segments of a population—the young and the old—to the working-age cohort. A low ratio is generally favorable for economic growth as fewer resources are needed for support. As societies move through the demographic transition, the nature of dependency shifts from being mostly children to being mostly seniors. Understanding these ratios is essential for governments to plan for the appropriate mix of educational, healthcare, and pension services.

211. (C) The age that divides the population into two equal halves.
The median age is a fundamental summary statistic used to describe the age structure of a population. It identifies the exact midpoint, where half of the people are older and half are younger. A rising median age over time is a definitive indicator of population ageing. This measure provides a clear and robust snapshot of a society's demographic maturity, which is essential for planners to anticipate the changing social and economic needs of a maturing population.

212. (B) Population density
This basic demographic metric provides a direct measure of how people are distributed within a specific unit of area. By dividing the total population by the total land area, it offers a crude but essential indicator of concentration or crowding. Unlike vital statistics such as birth or death rates, which track demographic events, density focuses on the spatial arrangement of individuals. It is a foundational tool for geographers and planners to compare geographic regions and prioritize infrastructure development.

213. (D) Age-sex structure.
A massive influx of people belonging to a specific age and gender group immediately alters the numeric balance of a local population. This inward migration creates a visible bulge in the population pyramid, typically among working-age males. This shift affects the local sex ratio and the proportions of different age cohorts. Identifying these sudden demographic changes is critical for planners, as they must provide infrastructure and services that match the unique needs of this new and specialized population segment.

214. (A) The processes that lead to an older population structure.
Population ageing is the result of several interrelated demographic shifts. The most fundamental drivers are a decline in birth rates, which reduces the proportion of young people, and an increase in life expectancy, which expands the share of seniors. Migration can also play a role by shifting the age balance of a region. Collectively, these components move the age structure of a society toward a more mature profile, necessitating new social security and healthcare strategies.

215. (A) Both A and R are true and R is the correct explanation of A.
Gender balance in the oldest age groups is significantly influenced by biological and environmental factors. In almost all societies, women tend to have a higher life expectancy than men, leading to their predominance among the elderly. This demographic reality means that a large majority of the very old are women, many of whom may face unique social and economic challenges, such as widowhood and lower financial security. Recognizing this trend is essential for designing gender-sensitive healthcare and social support policies.

216. (B) Determines the future momentum of population growth.
The balance of age and sex cohorts is a fundamental driver of how a population will change in the coming decades. A large youth cohort ensures that even as individual fertility falls, the total number of births may remain high for some time. Conversely, an older profile signals slowing growth and eventually, possible decline. Analyzing this structure is essential for planners to forecast future growth, anticipate labor supply trends, and prepare for the social needs of a changing society.

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disparities at a glance. It is essential for evaluating spatial balance and for the development of policies aimed at achieving a more equitable distribution of people or resources.

159. (C) The potential for loneliness and isolation as children move away for work.
Global shifts such as urbanization and increased labor migration are changing the social environment for older adults. As younger generations move to cities or other countries for better opportunities, many elderly people are left behind in their home communities. This separation can lead to significant social isolation and a lack of immediate care, creating new vulnerabilities. Addressing these emerging issues is a priority for policymakers seeking to ensure the well-being and social integration of the aged in a globalized world.

160. (A) Both A and R are true and R is the correct explanation of A.
The shift toward an older population structure is fundamentally a sign of progress in human well-being. It is the result of people living longer due to better medicine and nutrition, combined with the ability of families to plan smaller, healthier families. While this demographic transition brings new social and economic challenges, it ultimately represents a triumph over high mortality and poor health. Recognizing this positive foundation is important for developing constructive policies that address the needs of an ageing society.

161. (B) The process of population ageing.
This term describes a society where the proportion of elderly individuals is increasing while the share of young people is declining. It is driven by falling birth rates and rising life expectancy, which together raise the median age. This structural shift has broad implications for social security, healthcare, and the labor market. Managing the challenges and opportunities of an older society requires a comprehensive understanding of these demographic trends and proactive planning for future social needs.

162. (A) The preference for male offspring.
In several regions, deep-seated cultural beliefs have historically placed a higher value on sons than on daughters. This preference can lead to social and medical interventions that skew the gender balance from birth and influence the survival and well-being of children. This significant cultural factor has long-term impacts on the national sex ratio and overall demographic composition. Addressing these biases is essential for achieving gender equality and ensuring a more balanced and equitable demographic structure for the future.

163. (C) Child Dependency Ratio and Old-Age Dependency Ratio.
This summary statistic provides a measure of the total economic responsibility placed on the productive segment of society. By combining the proportions of both the young and the elderly, and comparing them to the working-age cohort, analysts can assess the overall demand for social services and financial support. A higher ratio indicates that a larger share of resources must be dedicated to non-productive groups, highlighting potential pressures on the economy and the need for effective planning.

164. (D) Age, sex, marital status, and economic activity.
Understanding the makeup of a population goes beyond simple counts to include a detailed analysis of its various characteristics. These measurable traits, such as age distribution, gender balance, and employment status, define the social and economic profile of a nation. This detailed information is essential for policymakers to plan for education, healthcare, labor markets, and social security. Demographic composition thus serves as the fundamental framework for effective and targeted national planning and development.

165. (C) It directly measures the population growth rate.
This statistical index is a versatile tool used to quantify the degree of inequality or concentration within a given distribution. Derived from the Lorenz curve, it provides a single numeric value ranging from zero to one. While it is foundational for analyzing spatial disparities and wealth distribution, it does not provide information about how fast a population is increasing or decreasing. For that, demographers rely on indicators such as the crude birth rate and the rate of natural increase.

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through employment opportunities, developed infrastructure, and the presence of natural resources like minerals. These factors create powerful incentives for migration and settlement. In contrast, an emotional or cultural connection to a specific home region is considered a social or cultural factor. It may encourage people to stay in an area despite a lack of economic incentives, reflecting the influence of personal heritage and social ties.

225. (B) the child-women ratio.
Population ageing is defined by the shift toward an older structure, measured by indicators such as the median age, the proportion of elderly residents, and the old-age dependency ratio. These tools focus on the maturing cohorts and their balance with the productive workforce. Conversely, the child-women ratio is a demographic measure that serves as a proxy for fertility, tracking the number of young children in a population. It describes reproductive behavior rather than the process of a population getting older.

226. (A) The demographic transition.
Most societies move through a multi-stage process characterized by shifts from high birth and death rates to low ones. This long-term evolution fundamentally changes the age structure, moving from a youthful profile with a wide base to an older, more balanced or constrictive profile. This transition is a central concept in demography, as it explains historical patterns of growth and provides a framework for anticipating the future social and economic challenges of an ageing society worldwide.

227. (C) The proportion living alone, with a spouse, or in multi-generational households.
For elderly individuals, their household composition is a primary determinant of their well-being and access to physical and emotional care. By analyzing who seniors reside with, researchers can identify those at risk of social isolation or lack of support. This information is critical for designing community outreach programs, targeted healthcare services, and social security policies. Understanding these arrangements allows for the creation of more effective support networks that cater to the diverse and changing needs of the aged.

228. (D) Anticipating future demand for urban infrastructure and services.
The speed at which a population becomes more urban is a critical indicator for city and regional planners. A high tempo signifies a rapid redistribution of people, which requires fast and strategic investment in housing, transportation, and public utilities. By monitoring this rate of change, governments can prepare for the social and spatial transformations associated with rapid city growth, ensuring that urban development remains sustainable and that the needs of an increasing urban population are met effectively.

229. (C) Roles and status within the family and society.
The shift toward an older population profile profoundly impacts social dynamics and cultural expectations. As individuals live longer, their positions within the family and their contributions to the community evolve. This can lead to changes in authority, the duration of caregiving roles, and the nature of intergenerational relationships. Understanding these shifts is essential for maintaining social cohesion and for designing policies that ensure the dignity, participation, and well-being of the elderly in a changing social landscape.

230. (A) a, b, c and e only
The Rank-Size Rule is a theoretical model in urban geography that describes an ideal hierarchical relationship between city sizes. It posits that a city's population should be inversely proportional to its rank. While it is not a fixed law and is often violated by primate city distributions, it provides a valuable framework for evaluating the balance of a country's urban hierarchy. Understanding these patterns is essential for geographers and planners who seek to analyze spatial organization and regional development.

231. (A) Different levels of fertility.
The visual profile of a population is primarily a reflection of its birth trends over several decades. Developing nations often have higher fertility, resulting in a wide-based pyramid with a large youth cohort. In contrast, developed nations have experienced long periods of low birth rates, leading to a more vertical structure with smaller younger generations. This fundamental demographic difference is the primary cause for the varied shapes of population pyramids seen

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globally, making birth rates central to structural analysis.

232. (A) Population age structure to economic growth potential.
This demographic concept explores how a temporary shift in the age composition—specifically a high proportion of workers relative to dependents—can create a window of opportunity for accelerated economic development. When birth rates fall, a nation has fewer children to support, allowing for increased savings and investment. However, capturing this benefit is not automatic and depends on proactive policies in health, education, and the labor market. Strategic planning is essential to turn this demographic window into lasting prosperity.

233. (C) It is easier to count existing children and women from a census than to register all births.
In many historical contexts and some contemporary regions, comprehensive birth registration systems are either missing or incomplete. Demographers therefore use census data on the number of young children and women of reproductive age as a practical and reliable proxy for measuring fertility. This ratio provides essential insights into reproductive trends over the recent past. Using such indicators is fundamental for analyzing population growth and social dynamics when primary vital statistics are not readily available for research.

234. (D) Rapid industrial and service sector growth.
The speed at which a region becomes more urban is strongly linked to its economic vitality. Areas that experience high growth in manufacturing and services act as powerful magnets, attracting migrants from rural areas in search of better employment and modern amenities. This economic pull accelerates the pace of spatial redistribution and the expansion of cities. Understanding these links is essential for planners to anticipate rapid urbanization and to design infrastructure that supports continued economic development and sustainable growth.

235. (B) a, b, and c only
The shift toward an older population structure brings a variety of systemic social and economic challenges. These include the financial sustainability of pension and health systems, the evolution of traditional family support networks, and the need for age-friendly urban environments. While general educational achievements are important social indicators, they are not typically considered a direct consequence or feature of population ageing. Addressing these specific issues requires proactive and multi-dimensional policy planning to ensure the well-being and integration of the elderly.

236. (A) Both Statement I and Statement II are correct.
Understanding human populations involves both knowing where people are located and measuring their concentration. Spatial distribution refers to the geographic arrangement of people across the land. Population density provides a basic mathematical ratio to describe this arrangement within a unit of area. Together, these concepts form the foundation for geographic analysis, helping researchers and planners to identify patterns of settlement and to prioritize the allocation of resources and services based on where people live.

237. (C) Population is highly concentrated in a few regions, leaving other large areas sparsely populated.
Human settlement is not even across the globe but is clustered in specific areas that offer favorable climate, water, and economic resources. Massive population centers exist in parts of Asia, Europe, and coastal North America. In contrast, vast regions like deserts, high mountains, and polar zones remain nearly empty due to harsh conditions. Identifying these patterns of concentration and dispersion is essential for understanding global demographic dynamics, resource use, and the challenges of managing increasingly crowded metropolitan environments.

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238. (D) A recent and rapid decline in fertility.
When birth rates fall sharply over a short period, the youngest age cohorts become significantly smaller than the ones immediately preceding them. This creates a population pyramid that is narrower at the bottom than in the middle. This structural shift signals the beginning of a rapid demographic transition toward an older society. Understanding this change is essential for planners to anticipate the sudden decrease in

demand for primary education and to prepare for the long-term impacts on the labor force.

239. (A) Erosion of traditional family support and lack of universal social security.
As life expectancy increases in India, many seniors are living longer, but they are doing so in a changing social environment. Urbanization and migration are weakening the traditional system of large families living together, while formal state support systems like universal pensions are not yet fully developed. This combination creates a significant risk of vulnerability for the aged. Addressing these care gaps is a priority for policymakers who must design new models of social security and community care.

240. (B) P-4, Q-3, R-1, S-2
Various demographic tools provide unique insights into a population's characteristics. The age-sex pyramid visualizes the overall composition of cohorts and genders. The Lorenz curve quantifies the degree of inequality in distribution. Dependency ratios measure the potential economic burden of non-productive groups on workers. The sex ratio monitors the numeric balance between males and females. Together, these measures offer a comprehensive framework for understanding the social and economic structure of a society, which is essential for effective planning.

241. (B) The patterns of inequality in distribution.
Measuring how concentrated or spread out a population is requires specialized statistical and visual tools. These indices and curves are designed to quantify the degree to which an actual distribution departs from a state of perfect equality. This analysis is fundamental for geographers and planners who need to identify regional disparities and evaluate the effectiveness of policies aimed at achieving a more balanced spatial arrangement. They provide a clear and standardized way to compare inequality across different territories.

242. (A) A decline in mortality followed by a later decline in fertility.
This economic opportunity arises from the timing of demographic changes. When mortality falls first, particularly for children, the population initially grows younger. When birth rates subsequently decline, the country experiences a temporary phase with many working-age adults and relatively few dependents. This favorable age structure can boost economic growth through increased labor supply and savings. Understanding this sequence is essential for planners who seek to utilize this window of opportunity through strategic investments in health and education.

243. (C) It represents an increase in the proportion of older persons, not just their absolute number.
Population ageing is a structural demographic change that shifts the overall balance of a society toward older ages. It is not simply about having more seniors, but about their growing share of the total population relative to the youth. This transition is a global phenomenon driven by falling birth rates and rising life expectancy. Recognizing this proportional shift is essential for understanding the long-term social and economic implications, such as the increasing demand for specialized geriatric healthcare and pensions.

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244. (D) A significant surplus of females.
Biological and social factors often lead to different survival rates for men and women, which become most apparent in the oldest age cohorts. In most societies, women have a higher life expectancy, resulting in their predominance among the very old. This demographic reality means that the gender balance at the top of the population pyramid is heavily skewed. Recognizing this trend is essential for planners to address the specific healthcare, social, and economic needs of elderly women, who are more likely to be widowed.

245. (A) Both A and R are true and R is the correct explanation of A.
The way people are spread across the Indian territory is far from uniform, with some regions being extremely crowded while others are nearly empty. This spatial distribution is the result of a complex interplay between physical features like fertile land and water, and human factors such as economic opportunities and infrastructure development. Recognizing these drivers is essential for geographers and planners to understand regional disparities and to design effective policies for balanced development and resource allocation nationwide.

298. (B) geriatric care and long-term management of chronic diseases

As populations age, the prevalence of chronic and degenerative diseases tends to increase significantly. This demographic shift requires healthcare systems to pivot their focus toward geriatric care and the long-term management of age-related conditions. Ensuring that medical services are adapted to the specific needs of older adults is crucial for maintaining their health and reducing the burden on acute care facilities.

299. (B) The need for age-friendly cities and concerns about mental health

Modern societies are identifying several emerging issues concerning their growing elderly populations. These include the necessity of developing age-friendly cities and infrastructure to facilitate active living. Additionally, concerns regarding mental health and the prevention of elder abuse have become prominent. Addressing these areas is essential for creating an environment where senior citizens can live with dignity and adequate support.

300. (A) potential for increased social isolation

The shift toward nuclear families and smaller households significantly changes the living arrangements for many seniors. A key social consequence of this trend is the increased potential for social isolation among the elderly. When traditional multi-generational support systems are absent, older individuals may lose regular social contact and informal care, which can negatively impact their overall mental and emotional well-being.

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developing nations continue to experience significant population expansion.

254. (D) achieving effective resource allocation and socio-economic planning
Analyzing shifts in population size and distribution is essential for several critical aspects of governance and planning. These demographic changes have deep implications for how resources are allocated and how environments are managed sustainably. Continuous analysis ensures that socio-economic planning remains effective and responsive to the evolving needs of the national and regional populations.

255. (C) shifts in population distribution over geographical space and across different time periods
The phrase spatial and temporal changes describes two dimensions of demographic shifts. Spatial changes refer to how population distribution varies across geographical areas or regions. Temporal changes denote variations occurring over different periods. Together, they provide a comprehensive view of how human populations shift in both location and size throughout the course of history.

256. (B) A larger proportion of older individuals and a smaller youth base
A rectangular or columnar age-sex pyramid is a hallmark of populations in developed countries. This specific shape indicates that the proportion of older individuals is relatively large compared to younger age groups. Such a structure is typically the result of long-term low fertility rates combined with high life expectancy, leading to stability.

257. (D) historically high fertility rates leading to a large young population
The classic pyramidal age structure seen in many developing nations features a broad base that narrows toward the top. This pattern is primarily caused by historically high fertility rates, which produce a large proportion of children and young people. The rapid tapering at older ages reflects higher mortality rates or lower life expectancy.

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258. (A) a combination of demographic, social, economic, and cultural factors
A population's age-sex structure is not determined by a single cause but by a complex interplay of various factors. Demographic variables like birth and death rates are fundamental, while social norms and economic conditions shape family size. Additionally, cultural preferences regarding gender and family values significantly influence the resulting composition and demographic dynamics.

259. (C) It dictates future growth potential and the demand for social services
Studying age-sex structures is vital because it reveals the potential for future population growth and the anticipated dependency burden. This demographic data allows governments to plan for essential social services. Understanding the ratio between working and non-working individuals is necessary for managing future demands for education, healthcare systems, and national pension schemes.

260. (A) long-term fertility trends and life expectancy
The distinct differences between the age structures of developed and developing nations are primarily driven by their specific demographic histories. Developed countries have experienced long-term declines in fertility and significant increases in life expectancy. These trends create unique structures compared to nations where fertility remains high, fundamentally altering the proportion of young and old people.

261. (D) The transition from high to lower mortality and fertility rates
India's current youthful population profile is the result of a significant demographic transition. This process involves a shift from high levels of mortality and fertility to lower rates for both. As death rates fell more quickly than birth rates, a bulge in the younger age groups was created, characterizing the country's unique demographic journey.

262. (B) altering family size norms and the value placed on children
Economic transitions, such as moving from an agrarian society to an industrial or service-oriented economy, influence population structure. These shifts alter traditional family size

norms and change the perceived economic value of children. As families adapt to new economic realities, their fertility decisions change, which ultimately impacts the base of the nation's population pyramid.

263. (C) The preference for sons and religious beliefs
Cultural factors play a significant role in shaping the age-sex composition of a nation like India. Deep-seated societal preferences for sons and various religious beliefs influence reproductive choices and fertility behavior. These cultural values can lead to skewed sex ratios and specific age structures, reflecting the complex social fabric that interacts with demographic trends.

264. (D) A skewed age-sex structure impacts dependency ratios and the demographic dividend
Understanding population composition is essential for policy-making because shifts in the age-sex structure have major socio-economic consequences. A skewed structure affects the dependency ratio, which is the balance between working and non-working individuals. This knowledge is crucial for planning social security frameworks and maximizing the potential benefits of a demographic dividend.

265. (A) an intricate combination of multiple demographic, social, economic, and cultural factors
The age-sex structure of India's population is a product of multiple overlapping influences rather than a single cause. It is shaped by an intricate combination of demographic transitions, social norms, economic shifts, and cultural values. These interconnected factors work together to create the unique population dynamics observed at both the national level and regional scales.

266. (B) It provides a crude average and can hide significant internal variations
While basic population density is a common measure, it has a significant limitation in spatial analysis. It provides a crude average for a large area, which often masks significant internal variations in how people are settled. This simplification fails to capture the nuanced clusters and sparse zones that exist within a region or country.

267. (B) the inequality of population distribution against a benchmark of perfect equality
The Lorenz curve and Gini's concentration ratio are sophisticated tools used to quantify population distribution. These indices measure the degree of inequality in how a population is spread across an area compared to a benchmark of perfect equality. A higher Gini ratio signifies that the population is highly concentrated in just a few specific locations.

268. (A) Distribution-dissimilarity index
The distribution-dissimilarity index is a specialized demographic tool used to compare how two distinct population groups are spread across various geographical units. By analyzing these spatial patterns, researchers can determine the degree of difference in the settlement locations of these groups. It provides a more analytical framework for understanding the nuances of spatial organization.

269. (C) The speed of change in the level of urbanization over a period
The tempo of urbanization is a measure used in urban studies to track changes in the level of urbanization over a specific period. It reflects the speed at which a population is shifting from rural areas into cities. This metric is essential for understanding the rate of urban growth and the resulting demographic concentration in urban centers.

270. (D) provide a more rigorous and analytical framework for understanding spatial concentration
Geographers use quantitative measures like the Rank-size rule, Gini ratio, and dissimilarity index to move beyond simple descriptions. These tools provide a rigorous and objective framework for analyzing spatial concentration. They allow for a more precise comparison of population patterns across different regions, helping researchers understand the hierarchical and complex organization of human settlements.

271. (C) Climate, topography, and water availability
Physical factors are fundamental determinants of where human populations settle and concentrate. These include natural elements such as climate, topography, soil fertility, and the availability of water resources. Historically, these factors have

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dictated that areas like coastal plains and fertile river valleys support higher densities, while harsh environments like deserts or mountains remain sparsely populated.

272. (B) Human and socio-economic factors
Modern technological and economic development have shifted the drivers of population distribution. While physical factors remain important, human and socio-economic factors have become increasingly influential. The location of industries, service sector hubs, and infrastructure projects creates new opportunities. These factors act as powerful pull-factors, drawing people toward specific urban centers and leading to higher population densities.

273. (D) The establishment of new administrative centres by the government
Political factors can deliberately alter the way a population is distributed across a country. One clear example is the establishment of new administrative centers by a government. Such policy decisions can redirect migration flows and encourage settlement in previously less populated areas. These actions demonstrate how governmental land-use policies and regional development plans shape the demographic landscape.

274. (A) The physical environment and human activity interact dynamically to shape population patterns
The spatial distribution of population is a dynamic result of the constant interaction between the physical environment and human activities. While natural features like topography and climate set the initial conditions, human factors like economic development and technology modify these patterns over time. Neither element acts alone, as they collectively shape the global and national demographic trends.

275. (C) supportive physical factors like fertile soil
Regions such as coastal plains and river valleys often exhibit high population concentrations due to their supportive physical characteristics. These areas typically offer temperate climates, flat topography, and fertile soil, which are conducive to agriculture and settlement. The natural availability of water and resources in these locations has historically made them primary hubs for human concentration and development.

276. (A) A process where the proportion of older individuals in a population increases
Population ageing is defined as a demographic process characterized by an increasing proportion of older individuals within a specific population. It represents a fundamental shift in the overall age structure of a society. This phenomenon goes beyond individuals simply living longer, as it involves a change in the relative sizes of different age groups over time.

277. (D) Declining fertility rates and increasing longevity
The global trend of population ageing is primarily driven by two key demographic components. The first is declining fertility rates, which reduce the proportion of young people in a population. The second is increasing longevity, resulting from better healthcare and nutrition. Together, these factors lead to a higher percentage of elderly individuals and a rising median age.

278. (B) a measure to study population ageing
The median age serves as a vital statistical measure for studying the process of population ageing. This index identifies the age that splits a population into two equal halves. As the proportion of older people grows, this median value increases. It provides a simple yet effective way to summarize and track the shifting age distribution within a country.

279. (C) It accelerates the process of population ageing
A rapid decline in fertility rates has a significant impact on the age structure by reducing the number of children born. This reduction shrinks the base of the population pyramid, which effectively increases the relative proportion of older age groups. Consequently, such a demographic shift accelerates the overall process of population ageing within a society or nation.

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280. (D) It affects all countries, but at different rates and times
Population ageing is a global phenomenon that eventually affects all nations regardless of their current development status. While every country is experiencing this transition, the pace and timing of the process vary significantly. Some

regions began ageing earlier due to rapid fertility declines, while others are just starting to see these structural changes in their population profiles.

281. (A) rapid and regionally diverse, with some states ageing faster than others
Ageing in India is characterized by a rapid pace and significant regional diversity. The process is not occurring at the same speed across all states. Some regions are experiencing this demographic shift much faster than others, leading to a varied national profile. This spatial variation creates a complex landscape where different areas face distinct demographic challenges and opportunities.

282. (B) lower fertility rates and higher life expectancies
Southern Indian states are further along in the demographic transition compared to northern regions. This advanced ageing is primarily due to their success in achieving lower fertility rates and significantly higher life expectancies. As birth rates dropped and health outcomes improved, the proportion of elderly citizens grew, creating a more mature population profile in these specific geographical areas.

283. (B) Increased demand on healthcare systems for chronic diseases
As the elderly population grows, it creates specific challenges for national infrastructure, particularly the healthcare system. There is an increased demand for services tailored to managing chronic and non-communicable diseases associated with older age. This shift requires a focus on geriatric care and long-term health management to ensure the well-being and quality of life for senior citizens.

284. (A) changing family structures and migration
Traditionally, Indian families provided strong support systems for the elderly through multi-generational households. However, these systems are currently under strain due to changing family structures and increased migration. As nuclear families become more common, fewer elderly people live with their children. This change raises concerns regarding the availability of informal care and the overall well-being of seniors.

285. (C) Policy and planning must account for the unique demographic profiles of different states
The significant spatial variation in India's ageing patterns means that demographic profiles differ greatly between states. Consequently, effective policy and planning cannot rely on a single national approach. Instead, strategies must be tailored to account for the unique needs and stages of the demographic transition found in different regions to address social, economic, and health concerns.

286. (D) a larger share of the working-age population compared to the dependent population
The demographic dividend represents a window of economic opportunity for a nation. It occurs when a population's age structure shifts so that the working-age group is larger than the non-working-age group. This larger share of productive individuals can lead to accelerated economic growth, provided the country implements the right social and economic policies to utilize this workforce.

287. (C) The Sex-ratio reflects the overall gender balance, while the Sex-ratio at birth specifically relates to births
There is a distinct difference between the overall sex-ratio and the sex-ratio at birth. The general sex-ratio reflects the total gender balance across the entire population, serving as an indicator of the social status of women. In contrast, the sex-ratio at birth specifically tracks the number of female births compared to males, highlighting potential sex-selective practices.

288. (B) can serve as a proxy for fertility when birth data is unreliable
The child-women ratio is an important fertility indicator, especially when reliable birth registration data is unavailable. It compares the number of young children, usually under five, to the number of women of childbearing age. Because it uses census or survey data, it serves as a practical proxy for fertility levels, helping demographers understand recent reproductive trends in a population.

289. (D) the social status of women
A low sex-ratio, which indicates fewer females compared to males, is a critical demographic sign. It often reflects the underlying social

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status of women and can suggest the presence of gender-based discrimination or sex-selective practices. Monitoring this indicator is essential for understanding gender equality and the broader social dynamics that influence the health and survival of females in society.

290. (A) The implementation of appropriate social and economic policies
Benefiting from a demographic dividend is not an automatic result of having a large working-age population. For a country to translate this demographic advantage into actual economic growth, it must implement appropriate social and economic policies. These policies should focus on education, healthcare, and job creation to ensure the workforce is healthy, skilled, and able to contribute productively.

291. (C) The age that divides the population into two numerically equal halves
Median age is a statistical index used by demographers to summarize a population's age distribution. It identifies the exact age that divides the entire population into two numerically equal halves. One half of the people is younger than this age, while the other half is older. A rising median age is a clear indicator that a population is ageing.

292. (A) provide a graphical illustration of the age and sex distribution
An age-sex pyramid serves as a visual tool for analyzing the demographic history and future of a population. It graphically illustrates how different age groups are distributed between males and females. The resulting shape of the pyramid provides immediate insights into past trends, such as baby booms or mortality crises, and indicates the potential for future population growth or decline.

293. (D) the sum of the Child Dependency Ratio and the Old-Age Dependency Ratio
The total dependency ratio is a demographic measure calculated as the sum of the child dependency ratio and the old-age dependency ratio. It represents the combined economic burden that both the young and the elderly place on the working-age population. This indicator is vital for economic planning, as it highlights the ratio of non-working dependents to productive workers.

294. (B) the population is ageing
When the median age of a population increases over time, it provides a direct signal that the population is growing older. This trend occurs as fertility rates decline and life expectancy increases, causing a higher proportion of the total population to fall into older age brackets. Monitoring this change is essential for understanding shifts in the overall age structure.

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295. (C) economic burden placed by the non-working population on the working population
The dependency ratio is an essential indicator of the economic relationship between different age groups. It measures the burden placed on the working-age population by those who are typically not in the workforce, specifically children and the elderly. High ratios suggest that the productive segment of society must support a relatively larger number of dependents, impacting public finance and planning.

296. (D) Increasing urbanization and the rise of nuclear family units
Traditional family support systems for seniors are declining due to broad societal shifts. The growth of urbanization and the trend toward modernization have led to the rise of smaller, nuclear family units. As these family models replace traditional multi-generational households, the built-in support mechanisms for the elderly are eroded, often resulting in more seniors living alone or without assistance.

297. (A) The financial dependency of the elderly due to a lack of pensions or savings
Financial dependency is a major economic issue associated with ageing, particularly in nations where many elderly individuals lack sufficient pensions or personal savings. Without independent financial resources, these individuals must rely on their children or state-funded social security for support. This dependency creates significant challenges for the long-term sustainability of public welfare systems and requires new financial security solutions.

246. (B) Timing or speed of change of a demographic phenomenon.
In demographic analysis, "tempo" refers to the velocity or rate at which a particular process occurs over time. For example, the tempo of urbanization describes how quickly a population is shifting from rural to urban settings. Monitoring the speed of these changes is essential for planners because rapid demographic shifts require faster investment in infrastructure and services. Understanding the timing of these events provides a dynamic view of how societies and spatial distributions are evolving over a given period.

247. (D) Effective and targeted socio-economic planning and policy-making.
India is a nation of immense regional and social diversity, and its population profile reflects this variety. By analyzing the numeric balance of age, sex, and other characteristics, policymakers can understand the specific needs of different groups. This information is critical for designing effective programs for education, healthcare, and employment. Demographic research thus serves as a foundational tool for addressing regional disparities and for ensuring that national development is both equitable and sustainable for all segments of society.

248. (A) The elderly population tends to have a higher prevalence of chronic diseases, requiring long-term and costly care.
As populations age, the primary focus of the healthcare system must shift toward the management of long-term health issues associated with getting older. Chronic conditions become more common, necessitating significant investment in specialized medical services and social support. This epidemiological transition is a major concern for policymakers, as it requires a reorganization of healthcare resources and a focus on geriatric medicine to ensure the well-being and quality of life for the growing number of older citizens in society.

249. (C) One-fourth the population of city 'A'.
The Rank-Size Rule is a theoretical model that describes a common hierarchical pattern in the population of cities within an urban system. It posits that the population of any city should be roughly equal to the population of the largest city divided by its rank. Therefore, the city ranked fourth would be expected to have about one-quarter of the population of the leading city. This framework helps geographers and planners evaluate the balance and maturity of a country's spatial organization.

250. (A) The decline in fertility rates.
Although improvements in life expectancy contribute to a larger elderly cohort, the most fundamental driver of population ageing globally is a sustained reduction in the number of births. When fewer children are born, the proportion of young people in the population decreases, which naturally increases the relative share of the elderly. This shift at the base of the population structure is the primary cause of the long-term move toward an older society. Understanding this cause is essential for planning future social security models.

251. (B) A phase of population explosion following a rapid decline in death rates
India's temporal population change is characterized by a specific demographic transition. Initially, both birth and death rates were high. This was followed by a phase where death rates declined rapidly while birth rates decreased more slowly. This mismatch created a significant gap, resulting in a population explosion during the mid-twentieth century.

252. (A) significant variation with dense clusters in fertile and coastal areas
India exhibits significant spatial variation in how its population is distributed across the country. Dense concentrations are primarily found in fertile plains like the Ganges valley and coastal regions where resources are abundant. In contrast, geographically challenging areas such as the Himalayan region and arid western states support much sparser population clusters.

253. (C) Developed countries may be facing population stabilization or decline
Global demographic patterns show that population changes are not uniform across all nations. While growth has been unprecedented in the last two centuries, regional differences are stark. Developed countries are currently witnessing a shift toward stabilization or even a decline in their numbers. Meanwhile, many

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CHAPTER 04
Nuptiality and Fertility

1. Which of the following best defines 'nuptiality' in the context of demography?
(A) The demographic study of birth rates and reproductive trends in a population.
(B) The study of marriage patterns, including rates, ages at marriage, and dissolution.
(C) The analysis of mortality trends and death rates related to marital status.
(D) The process of social migration for the specific purpose of marriage.

2. The Crude Birth Rate (CBR) is calculated as the number of live births in a year per:
(A) 1,000 mid-year population.
(B) 1,000 women aged 15-49.
(C) 1,000 married women.
(D) 1,000 women of all ages.

3. Which of the following statements about the Singulate Mean Age at Marriage (SMAM) is correct?
(A) It is calculated using comprehensive data on the age of couples at the time of divorce.
(B) It represents the average age at marriage for a specific birth cohort that has completed its years.
(C) It estimates the mean age at first marriage for a hypothetical cohort using current age patterns.
(D) It requires longitudinal tracking data following individuals from their birth to their marriage.

4. The General Fertility Rate (GFR) is considered a more refined measure than the Crude Birth Rate (CBR) because:
(A) It includes stillbirths and fetal deaths in its primary calculation.
(B) It accounts for the mortality of women before they reach childbearing age.
(C) It uses the total population as its denominator, making it more stable.
(D) Its denominator is restricted to the population actually at risk of childbearing.

5. Which of the following is NOT a primary source of data for nuptiality studies?
(A) Census
(B) Vital Registration Systems
(C) Economic and industrial production records
(D) Sample Surveys

6. Read the following statements and select the correct option.
Statement I: The Total Fertility Rate (TFR) is an age-standardized measure of fertility.
Statement II: The TFR represents the average number of children a woman would have if she experienced the current age-specific fertility rates throughout her reproductive life.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

7. A demographer wants to calculate the fertility rate for women of age 25. Which measure would be most appropriate?
(A) Crude Birth Rate (CBR)
(B) Total Fertility Rate (TFR)
(C) General Fertility Rate (GFR)
(D) Age-Specific Fertility Rate (ASFR)

8. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): An increase in the mean age at marriage in a population often contributes to a decline in fertility.
Reason (R): A higher age at marriage shortens the total reproductive span within which women are exposed to the risk of pregnancy.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.

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(B) The period of temporary infertility after childbirth.
(C) The state of being permanently unable to have children.
(D) The physiological capacity to conceive and bear children.

28. An increase in widowhood at younger ages in a population, without a corresponding increase in remarriage, is likely to have what effect on overall fertility?
(A) A positive effect, increasing overall fertility.
(B) A negative effect, decreasing overall fertility.
(C) No significant effect on overall fertility.
(D) A delayed effect, increasing fertility in older age groups.

29. The Decadal Synthetic Cohort Method for calculating SMAM is an adaptation that uses data from:
(A) A single census.
(B) Vital registration systems only.
(C) Two consecutive censuses.
(D) Longitudinal panel surveys.

30. In Bongaarts' model, the index of postpartum infecundability (Ci) is primarily influenced by:
(A) The age at marriage.
(B) The use of contraception.
(C) The rate of induced abortion.
(D) The duration and intensity of breastfeeding.

31. Which of the following is an example of a period or cross-sectional fertility indicator?
(A) Total Fertility Rate (TFR).
(B) Children Ever Born to women aged 45-49.
(C) Completed Family Size.
(D) The average number of children born to the 1950 birth cohort.

32. Which of the following statements correctly identifies a key characteristic of the fertility transition in many developing countries, including India?
(A) The transition started earlier but progressed slower than in developed countries.
(B) The decline in fertility was rapid, often aided by state family planning programs.
(C) The transition was primarily driven by an increase in the age at marriage, with contraception playing a minor role.
(D) The fertility decline occurred uniformly across all socio-economic groups and regions from the very beginning.

33. Which of the following is a potential socio-economic implication of a country experiencing prolonged below-replacement level fertility?
(A) A rapidly growing youth population.
(B) A shrinking labor force and an aging population.
(C) Increased pressure on the education system.
(D) A decrease in the dependency ratio.

34. The Rele Technique is an indirect method used to estimate fertility levels primarily from:
(A) Data on the age structure of the population, specifically the Child-Woman Ratio.
(B) Data on children ever born and children surviving.
(C) Data on orphanhood.
(D) Data on marital duration and parity.

35. The Crude Marriage Rate (CMR) is defined as the number of marriages in a year per:
(A) 1,000 unmarried population.
(B) 1,000 population aged 15 and over.
(C) 1,000 mid-year population.
(D) 1,000 women of reproductive age.

36. Consider the following statements about nuptiality and fertility:
a. An increase in divorce rates can lower cumulative fertility.
b. The Singulate Mean Age at Marriage (SMAM) is a cohort measure.
c. Widow remarriage can potentially increase a woman's completed fertility compared to remaining a widow.
d. The impact of widowhood on fertility is independent of the age at which it occurs.
e. All marriages contribute equally to the Crude Marriage Rate regardless of whether it is a first or subsequent marriage.
Which combination of statements is correct?
(A) a, b, c
(B) a, c, e
(C) b, d, e
(D) a, c, d

37. What does a Net Reproduction Rate (NRR) of less than 1.0 signify?

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(B) A hypothetical group experiencing current marriage patterns throughout life.
(C) A cohort of people created by combining data from two different censuses.
(D) A group of people selected based on their marital status for a specific survey.

18. What is 'Replacement Level Fertility'?
(A) The fertility level at which a population exactly replaces itself between generations.
(B) The fertility level at which every woman has exactly two children.
(C) The fertility level at which the Net Reproduction Rate (NRR) is zero.
(D) The Gross Reproduction Rate (GRR) required to maintain a stable population.

19. The "Reverse Survival Technique" is used to estimate:
(A) The future population of a country.
(B) The life expectancy at birth.
(C) The number of births in a past period based on the current number of children.
(D) The mean age at marriage for a past cohort.

20. Which of the following is considered a cohort indicator of fertility?
(A) Total Fertility Rate (TFR)
(B) Crude Birth Rate (CBR)
(C) General Fertility Rate (GFR)
(D) Children Ever Born (CEB)

21. What is the primary purpose of using direct and indirect standardization for birth rates?
(A) To calculate the total number of births in a population.
(B) To forecast future birth trends with high accuracy.
(C) To compare fertility levels between populations with different age structures.
(D) To estimate the number of births to unmarried women.

22. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The Child-Woman Ratio is often used as a fertility measure when reliable birth registration data is unavailable.
Reason (R): It is calculated using basic age-sex data from a census, which is more commonly available than complete vital statistics.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

23. The Davis and Blake framework of fertility analysis categorizes determinants into a set of:
(A) Proximate Determinants
(B) Socio-economic Variables
(C) Distal Factors
(D) Intermediate Variables

24. Which of the following factors is NOT one of Bongaarts' four main proximate determinants of fertility?
(A) Level of female education.
(B) Proportion of women married or in sexual union.
(C) Use and effectiveness of contraception.
(D) Prevalence of induced abortion.

25. The P/F Ratio Technique, developed by Brass, is primarily used for:
(A) Estimating future population growth.
(B) Calculating the mean age at childbirth.
(C) Evaluating the quality of fertility data and adjusting it.
(D) Projecting the number of marriages in a population.

26. Consider the following stages in a demographic analysis:
1. Calculation of Age-Specific Fertility Rates (ASFRs).
2. Collection of data on births by age of mother.
3. Calculation of Total Fertility Rate (TFR).
4. Collection of data on the female population by age.

What is the correct chronological order of these stages for calculating TFR?
(A) 2, 4, 1, 3
(B) 4, 2, 3, 1
(C) 1, 2, 4, 3
(D) 2, 3, 1, 4

27. The term 'fecundity' refers to:
(A) The actual reproductive performance of a population.

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46. Which of the following correctly pairs a fertility measure with its primary characteristic?
(A) GFR - a cohort measure of fertility.
(B) NRR - a fertility measure that ignores mortality.
(C) TFR - a summary measure of period age-specific fertility rates.
(D) Child-Woman Ratio - a measure derived from vital registration data.

47. Identify the measure that specifically quantifies the number of daughters a newborn girl is expected to bear, assuming current fertility and mortality rates remain constant.
(A) Gross Reproduction Rate (GRR)
(B) Total Fertility Rate (TFR)
(C) Net Reproduction Rate (NRR)
(D) Total Marital Fertility Rate (TMFR)

48. An "Order Specific Fertility Measure" would provide information on:
(A) The fertility rates of women in a specific age group.
(B) The average number of children born per woman.
(C) The rates of occurrence of first births, second births, third births, etc.
(D) The fertility rates of married versus unmarried women.

49. What is the main limitation of the Crude Birth Rate (CBR) as a comparative measure of fertility?
(A) It is difficult to compute.
(B) It is heavily influenced by the age and sex composition of the population.
(C) It only includes births to married women.
(D) It does not account for multiple births (twins, triplets).

50. Match the concepts in List I with their definitions in List II and select the correct answer.
List I: (Concept)
P. Fecundity
Q. Fertility
R. Sterility
S. Post-Partum Amenorrhoea
List II: (Definition)
1. Actual reproductive performance
2. Inability to conceive
3. Physiological capacity to conceive
4. Temporary post-childbirth infertility
(A) P-3, Q-1, R-2, S-4
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-2, R-1, S-4
(D) P-1, Q-2, R-4, S-3

51. The calculation of Singulate Mean Age at Marriage (SMAM) requires which specific data from a census?
(A) Number of currently married people by age.
(B) Number of divorces and widows by age.
(C) The marital duration for all currently married women.
(D) Proportion of males and females in each age group who have never been married.

52. The Total Marital Fertility Rate (TMFR) is computed by summing which of the following rates?
(A) Age-Specific Marital Fertility Rates (ASMFR)
(B) Age-Specific Fertility Rates (ASFR)
(C) Order-Specific Fertility Rates
(D) General Fertility Rates for each age group

53. From a demographic perspective, what is the primary impact of widespread and prolonged breastfeeding on fertility?
(A) It increases the likelihood of conception.
(B) It extends the period of post-partum amenorrhoea, thus increasing birth intervals.
(C) It has no significant biological effect on fertility.
(D) It primarily affects the sex ratio of subsequent births.

54. The 'fertility transition' refers to the shift from:
(A) Low birth and death rates to high birth and death rates.
(B) High birth and death rates to low birth and death rates.
(C) High fertility and high mortality to high fertility and low mortality.
(D) High fertility to low fertility within a population.

55. Which of the following is NOT a period indicator of fertility?
(A) Crude Birth Rate (CBR)
(B) Total Fertility Rate (TFR)

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(A) The population is growing rapidly.
(B) The fertility level is exactly at the replacement level.
(C) The female population is not producing enough daughters to replace itself.
(D) The mortality rate among women of childbearing age is zero.

38. The Coale-Trussell model is primarily used for which purpose in demography?
(A) To estimate mortality rates from incomplete data.
(B) To model the standard age pattern of fertility.
(C) To project future international migration flows.
(D) To calculate the Singulate Mean Age at Marriage (SMAM).

39. The term 'Post-Partum Amenorrhoea' (PPA) refers to the period of:
(A) Increased fertility immediately after childbirth.
(B) The nine-month gestation period.
(C) Permanent sterility that occurs in some women after childbirth.
(D) Temporary infertility following a birth without ovulation or menstruation.

40. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The Total Marital Fertility Rate (TMFR) is typically higher than the Total Fertility Rate (TFR) in populations where not all women marry or remain married throughout their reproductive years.
Reason (R): TMFR is based on the fertility of married women only, while TFR includes the zero fertility of unmarried women in its calculation base.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

41. In the context of fertility analysis, what is 'sterility'?
(A) The deliberate avoidance of conception through contraception.
(B) The physiological inability to conceive a child.
(C) The period of non-ovulation after giving birth.
(D) The end of a woman's reproductive life, also known as menopause.

42. The "Brass P1/F1 Ratio Technique" is a specific application of the P/F ratio method that focuses on:
(A) The fertility of women aged 45-49.
(B) The timing and quantum of first births.
(C) The fertility of women in their peak childbearing years (20-29).
(D) Overall mortality levels.

43. Which of the following is NOT one of the three broad categories of intermediate variables in the Davis and Blake framework?
(A) Factors affecting exposure to intercourse ('Intercourse Variables').
(B) Factors affecting exposure to conception ('Conception Variables').
(C) Factors affecting gestation and successful parturition ('Gestation Variables').
(D) Factors affecting socio-economic status ('Background Variables').

44. A key advantage of using Age-Specific Marriage Rates (ASMR) over the Crude Marriage Rate (CMR) is that ASMRs:
(A) Are easier to calculate with limited data.
(B) Are not affected by the age and sex structure of the population.
(C) Include divorces and widowhood in their calculation.
(D) Can be used to directly compute the Total Fertility Rate.

45. The Lee and Bulatoo framework of fertility is known for incorporating:
(A) Only demographic variables into its model.
(B) The economic costs and benefits of children as a central component.
(C) A focus exclusively on biological determinants.
(D) A simplified version of the Davis and Blake model.

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(B) A "youth bulge" in the population pyramid.
(C) An increase in the old-age dependency ratio.
(D) Higher crude birth rates.

82. The term "birth order statistics" refers to:
(A) The chronological order in which fertility measures were developed.
(B) The analysis of births classified by whether they are the first, second, third, etc. child of the mother.
(C) The ranking of countries by their Total Fertility Rate.
(D) The average age of mothers at the birth of their first child.

83. Which of the following situations would necessitate the use of indirect standardization for comparing birth rates between two cities?
(A) When age-specific birth rates for both cities are known and accurate.
(B) When age-specific birth rates are not available, but total births and age structure are known.
(C) When both cities have identical age structures.
(D) When only the crude birth rates for the two cities are known.

84. In the Davis and Blake framework, "fecundity or infecundity, as affected by involuntary causes" falls under which category of intermediate variables?
(A) Intercourse variables
(B) Conception variables
(C) Gestation variables
(D) Socio-economic variables

85. Arrange the following events in chronological order to represent a typical fertility history.
1. First Birth
2. Last Birth
3. Marriage
4. Menarche

(A) 4, 3, 1, 2
(B) 3, 4, 1, 2
(C) 4, 1, 3, 2
(D) 1, 3, 2, 4

86. What is a primary limitation of using the Crude Marriage Rate (CMR) for comparisons over time or between populations?
(A) It is only applicable to populations with high marriage rates.
(B) It is influenced by the age, sex, and marital status composition of the population.
(C) It does not distinguish between first marriages and remarriages.
(D) It requires data that is not typically collected in a census.

87. Which of the following is NOT a direct source of data for fertility analysis?
(A) Vital registration of births.
(B) Census questions on children ever born.
(C) Population projections.
(D) Sample surveys like the National Family Health Survey (NFHS).

88. If a demographer uses census data on the number of children aged 0-4 and the number of women aged 15-49 to estimate fertility, which measure are they calculating?
(A) General Fertility Rate (GFR)
(B) Child-Woman Ratio (CWR)
(C) Total Fertility Rate (TFR)
(D) Age-Specific Fertility Rate (ASFR)

89. Read the following statements and select the correct option.
Statement I: An increasing trend in the Singulate Mean Age at Marriage (SMAM) in India suggests a postponement of marriage.
Statement II: A higher SMAM directly causes a lower Gross Reproduction Rate (GRR).
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

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90. The Gross Reproduction Rate (GRR) is a measure of fertility that focuses on:
(A) The number of children, regardless of sex.
(B) The replacement of the population in terms of sons.
(C) The number of daughters a cohort of women would have, ignoring mortality.
(D) The completed fertility of married women only.

91. Consider the following statements about fertility frameworks:
a. The Davis and Blake framework is purely

(C) Completed Family Size (CFS)
(D) Gross Reproduction Rate (GRR)

56. The indirect method of fertility estimation known as the "P/F Ratio Technique" compares:
(A) Past fertility (P) reported by older women with current fertility (F) derived from recent births.
(B) Paternal fertility (P) with female fertility (F).
(C) Period fertility (P) with cohort fertility (F) as reported in the same survey.
(D) Planned fertility (P) with actual fertility (F).

57. The Sex-Age Adjusted Birth Rate is designed to:
(A) Provide a measure of fertility standardized for population sex and age structure.
(B) Calculate the birth rate for a specific sex, such as male or female.
(C) Adjust birth rates for variations in the sex ratio at birth.
(D) Estimate the number of births to women of a specific age.

58. Consider the following statements regarding nuptiality in India:
a. Divorce rates in India, while increasing, are still relatively low compared to many Western countries.
b. The incidence of widowhood has been declining due to increased life expectancy.
c. There is a strong inverse relationship between female education level and age at marriage.
d. Widow remarriage is legally prohibited in several states.
Which of the above statements are correct?
(A) a and b only
(B) a, c, and d
(C) c and d only
(D) a and d only

59. A value of 2.1 is often cited as the replacement-level TFR for developed countries. Why is the value slightly above 2.0?
(A) To account for infant and child mortality, ensuring that a sufficient number of females survive to reproductive age.
(B) To factor in the proportion of women who never marry or have children.
(C) To compensate for the unequal sex ratio at birth (more boys are born than girls).
(D) To account for both mortality and the unequal sex ratio at birth.

60. Direct standardization of birth rates requires which of the following sets of data?
(A) Age-specific birth rates of the study population and the age structure of a standard population.
(B) Total births in the study population and age-specific birth rates of the standard population.
(C) Age structure of both study and standard populations only.
(D) Total births and total population for both study and standard populations.

61. Which framework for fertility analysis quantified the impact of four key factors: marriage, contraception, induced abortion, and postpartum infecundability?
(A) Davis and Blake's Intermediate Variable Framework
(B) Lee and Bulatoo's Framework
(C) Bongaarts' Proximate Determinants Model
(D) Coale-Trussell's Model

62. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Fertility in India shows significant differentials across states and socio-economic groups.
Reason (R): Factors such as female literacy, urbanization, and access to family planning services are unevenly distributed across the country.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

63. The primary data input for the Reverse Survival method of fertility estimation is:
(A) Number of registered births in previous years.
(B) The age-sex distribution of the current population, particularly of young children.
(C) Survey data on women's desired family size.
(D) Data on contraceptive prevalence.

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(D) A is false but R is true.

9. The concept of 'Completed Family Size' is best described as:
(A) The total number of children a woman plans to have in her lifetime.
(B) The ideal number of children preferred by couples in a society.
(C) The number of children ever born to women who have passed reproductive years.
(D) The total number of live births in a population in a single year.

10. Which fertility indicator is calculated as the sum of all Age-Specific Fertility Rates (ASFRs) for a given year, multiplied by the width of the age interval?
(A) Total Fertility Rate (TFR)
(B) Gross Reproduction Rate (GRR)
(C) Net Reproduction Rate (NRR)
(D) Crude Birth Rate (CBR)

11. What does Coale's Index of marriage, 'Im', measure?
(A) The average age at marriage in a population.
(B) The extent to which fertility is reduced by marriage patterns.
(C) The universal standard of marriage prevalence.
(D) The proportion of women who will eventually marry.

12. Consider the following statements about fertility measures:
a. GFR is a more refined measure than CBR.
b. TFR is affected by the age structure of the population.
c. GRR accounts for the mortality of female children.
d. NRR of 1.0 indicates that a generation of mothers is exactly replacing itself.
Which of the above statements are correct?
(A) a and d only
(B) a, b, and c only
(C) b and c only
(D) a, c, and d only

13. The measure that relates the number of births to married women of reproductive age is known as:
(A) Age-Specific Fertility Rate (ASFR)
(B) Total Fertility Rate (TFR)
(C) Age-Specific Marital Fertility Rate (ASMFR)
(D) General Fertility Rate (GFR)

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14. The difference between the Gross Reproduction Rate (GRR) and the Net Reproduction Rate (NRR) is that:
(A) GRR considers only male births, while NRR considers female births.
(B) GRR is a cohort measure, while NRR is a period measure.
(C) NRR is calculated for married women only, while GRR is for all women.
(D) NRR accounts for mortality on the female cohort, while GRR does not.

15. Identify the incorrect statement regarding marriage patterns in India.
(A) Female literacy is negatively correlated with the age at marriage.
(B) There has been a general trend of increasing age at marriage over the past few decades.
(C) Age at marriage tends to be higher in urban areas compared to rural areas.
(D) There are significant state-wise differentials in the mean age at marriage.

16. Match the fertility measures in List I with their corresponding denominators in List II and select the correct answer from the codes given below.
List I: (Fertility Measure)
P. CBR
Q. GFR
R. TFR
S. NRR
List II: (Denominator)
1. Women in reproductive ages (15-49)
2. Mid-year total population
3. Hypothetical cohort of women, incorporating mortality
4. Hypothetical cohort of women, no mortality considered
(A) P-2, Q-1, R-4, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-2, Q-1, R-3, S-4
(D) P-1, Q-2, R-4, S-3

17. The "Synthetic Cohort" method used in the calculation of SMAM refers to:
(A) A real group of people born in the same year, followed over time.

(B) The actual number of children a woman has.
(C) The probability of conceiving in a given menstrual cycle.
(D) The state of being permanently unable to conceive.

74. If the GRR for a population is 1.5 and the NRR is 0.9, this implies that:
(A) There is an error in the data, as NRR cannot be lower than GRR.
(B) High fertility exists but high female mortality precedes end of reproductive years.
(C) The population is experiencing high levels of out-migration of young women.
(D) The fertility rate is below replacement, and mortality is very low.

75. What is the primary difference between ASFR and ASMFR?
(A) ASFR is a period measure, while ASMFR is a cohort measure.
(B) The denominator of ASMFR is restricted to currently married women in the specific age group.
(C) ASMFR includes only female births.
(D) ASFR is calculated for 5-year age groups, while ASMFR is for single years of age.

76. Consider the following statements about determinants of fertility:
a. Post-Partum Amenorrhoea (PPA) is a biological factor that influences birth spacing.
b. Sterility refers to the voluntary decision to not have children.
c. Fecundity is a measure of the actual number of children born.
d. Prolonged breastfeeding tends to shorten the duration of PPA.
e. Bongaarts' model includes contraception as a key proximate determinant.
Which of the following combinations of statements is correct?
(A) a and e
(B) b and d
(C) a, c, and e
(D) b, c, and d

77. An increase in the age at marriage, a rise in divorce rates, and an increase in widowhood would all directly impact which of Coale's indices of nuptiality?
(A) Im (proportion marrying)
(B) Ig (index of marital fertility)
(C) If (index of overall fertility)
(D) These factors are not captured by Coale's indices.

78. The "fertility transition" in India is characterized by:
(A) Significant regional and socio-economic disparities in the pace and level of fertility decline.
(B) A uniform decline in fertility across all states at the same time.
(C) A transition that is now complete, with all states below replacement level.
(D) A decline driven solely by changes in marriage patterns.

79. Which indirect estimation technique is conceptually based on comparing cumulative fertility (children ever born) with period fertility (births in the last year)?
(A) Reverse Survival Method
(B) Rele Technique
(C) P/F Ratio Technique
(D) Coale-Trussell Model

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80. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The Net Reproduction Rate (NRR) is always less than or equal to the Gross Reproduction Rate (GRR).
Reason (R): The NRR incorporates female mortality from birth through the childbearing years, which reduces the potential number of births compared to the GRR, which assumes zero mortality.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

81. A key demographic consequence of sustained below-replacement fertility is:
(A) Population momentum leading to continued growth.

64. Which of the following best describes the "mean age of widowhood/divorce" as derived from Census data?
(A) A projection of the future average age of widowhood.
(B) An average age calculated from vital statistics on death of spouse.
(C) A cross-sectional estimate of the average age of currently widowed or divorced persons.
(D) The age at which 50% of the married population becomes widowed or divorced.

65. Consider the following nuptiality measures:
1. Crude Marriage Rate
2. Age-Specific Marriage Rate
3. Singulate Mean Age at Marriage
4. Order-Specific Marriage Rate

Arrange these measures from the least refined to the most refined in terms of accounting for population structure.
(A) 1, 3, 4, 2
(B) 1, 4, 2, 3
(C) 1, 2, 4, 3
(D) 3, 1, 2, 4

66. The Child-Woman Ratio is typically defined as:
(A) (Number of children aged 0-4 / Number of women aged 15-49) × 1000
(B) (Number of children aged 0-9 / Number of women aged 15-44) × 1000
(C) (Number of live births / Number of women aged 15-49) × 1000
(D) (Number of children aged 0-14 / Number of total women) × 1000

67. In demographic terminology, the actual bearing of children is known as:
(A) Nuptiality
(B) Fecundity
(C) Fertility
(D) Sterility

68. The "Decadal Synthetic Cohort Method" for SMAM estimation was developed to overcome a limitation of the original method by:
(A) Using data from a single point in time.
(B) Incorporating mortality into the calculation.
(C) Using data from two consecutive censuses to account for temporal changes and mortality.
(D) Focusing only on rural populations.

69. Which of the following is NOT an 'intermediate variable' according to the Davis and Blake framework?
(A) Age of entry into sexual unions.
(B) Use or non-use of contraception.
(C) Fetal mortality from involuntary causes.
(D) Rural or urban residence.

70. An Order-Specific Marriage Rate would measure:
(A) The rate at which people of a certain age get married.
(B) The rate of marriage in a specific region or state.
(C) The rate at which never-married people enter their first marriage.
(D) The overall rate of marriage for the entire population.

71. Match the frameworks/models in List I with their core concepts in List II and select the correct answer.
List I: (Framework/Model)
P. Davis & Blake
Q. Bongaarts
R. Coale-Trussell
S. Rele Technique
List II: (Core Concept)
1. Proximate Determinants
2. Intermediate Variables
3. Estimation from Child-Woman Ratio
4. Model Age Pattern of Fertility
(A) P-2, Q-1, R-4, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-2, Q-4, R-1, S-3
(D) P-1, Q-3, R-4, S-2

72. A major issue with using "Children Ever Born" (CEB) data from younger women to estimate current fertility is that:
(A) It reflects cumulative fertility over a short period and not completed fertility.
(B) Younger women tend to over-report their births.
(C) CEB data is only collected for women over 30.
(D) It does not distinguish between live births and stillbirths.

73. The concept of 'fecundability' is best defined as:
(A) The physiological ability to have a child.

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quantitative.
b. Bongaarts' model identifies four main proximate determinants that explain most variation.
c. The Lee and Bulatoo framework incorporates economic considerations of childbearing.
d. Bongaarts' framework is a direct contradiction of the Davis and Blake framework.
e. Davis and Blake categorized their intermediate variables into three main groups.

Which combination of statements is correct?
(A) a, b, c
(B) c, d, e
(C) b, c, e
(D) a, d, e

92. A fertility rate calculated for a specific 5-year age group of women (e.g., 20-24) is called:
(A) A General Fertility Rate
(B) A Total Fertility Rate
(C) An Age-Specific Fertility Rate
(D) A Crude Birth Rate

93. The impact of divorce on the fertility of an individual woman is most dependent on:
(A) The legal reasons cited for the divorce.
(B) Her age at the time of divorce and whether she remarries.
(C) The national divorce rate.
(D) The number of children she had before the divorce.

94. What does the "Synthetic Cohort" in the context of SMAM or TFR calculation imply?
(A) It follows a real group of individuals over their entire lifespan.
(B) It is a cohort constructed from genetic data.
(C) It is a hypothetical cohort experiencing period-specific rates of a short window.
(D) It is a cohort created by combining data from multiple countries.

95. In India, levels, trends and differentials in fertility are LEAST correlated with which of the following factors?
(A) Female literacy and education
(B) Place of residence (urban/rural)
(C) Male height
(D) State of residence

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96. A researcher has census data on the proportion of never-married females for age groups 15-19, 20-24, ..., 45-49. What key demographic indicator of nuptiality can be calculated directly from this data?
(A) Crude Divorce Rate
(B) Singulate Mean Age at Marriage (SMAM)
(C) Total Marital Fertility Rate (TMFR)
(D) Mean age of widowhood

97. The Total Fertility Rate (TFR) of a population is 3.0. Assuming a sex ratio at birth of 105 males per 100 females, what is the approximate Gross Reproduction Rate (GRR)?
(A) 3.0
(B) 1.46
(C) 1.54
(D) 2.1

98. Match the indirect methods in List I with their primary input/use in List II and select the correct answer.
List I: (Indirect Method)
P. P/F Ratio Technique
Q. Reverse Survival
R. Rele Technique
S. Coale-Trussell Model
List II: (Primary Input/Use)
1. Census age distribution of young children
2. Child-Woman Ratio
3. Comparison of period and cohort fertility
4. Standard pattern of marital fertility
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-1, R-2, S-4
(C) P-3, Q-2, R-1, S-4
(D) P-4, Q-1, R-2, S-3

99. The decline in widowhood rates in India over recent decades can be primarily attributed to:
(A) An increase in female-selective migration.
(B) A significant rise in widow remarriage across all age groups.
(C) Improvements in life expectancy for both males and females.
(D) A decrease in the overall marriage rate.

100. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).

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List II: (Associated Concept)

1. Intermediate Variables
2. P/F Ratio
3. Proximate Determinants
4. Singulate Mean Age at Marriage

(A) P-3, Q-2, R-1, S-4
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-1, R-2, S-4
(D) P-2, Q-3, R-1, S-4

181. In a population where child mortality is high, the replacement level TFR would be:
(A) Lower than 2.1
(B) Exactly 2.0
(C) Higher than 2.1
(D) Unrelated to child mortality

182. A major trend in marriage patterns in India over the past 50 years has been:
(A) A decrease in the mean age at marriage for females.
(B) An increase in the mean age at marriage for females.
(C) A stabilization of the age at marriage with no significant change.
(D) A decrease in the prevalence of marriage.

183. Indirect standardization of birth rates is used when:
(A) Age-specific rates for the study population are known and reliable.
(B) The age structure of the study population is unknown.
(C) Age-specific rates for the study population are unknown, but total births are known.
(D) The standard population has an unusual age structure.

184. The concept of nuptiality encompasses all of the following EXCEPT:
(A) The frequency of marriages.
(B) The age at which people marry.
(C) The dissolution of marriages by divorce or death.
(D) The number of children born within a marriage.

185. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).

Assertion (A): In most societies, the Total Marital Fertility Rate (TMFR) is higher than the Total Fertility Rate (TFR).

Reason (R): The TMFR's calculation is based on a denominator of married women, who have a higher fertility rate than the entire female population (which includes unmarried women with zero or low fertility).

(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

186. Which of the following frameworks is explicitly designed as a quantitative model to show how intermediate variables inhibit fertility from its theoretical maximum?
(A) Davis and Blake's Framework
(B) Bongaarts' Proximate Determinants Model
(C) Lee and Bulatoo's Framework
(D) Coale-Trussell Model

187. The term "cross-sectional indicators" of fertility refers to measures that:
(A) Follow a single cohort of women over their lifetime.
(B) Are based on data collected at a single point in time or over a short period.
(C) Are calculated by comparing different countries.
(D) Are based on genetic data.

188. A sudden increase in widowhood among young women in a population, without a corresponding change in remarriage patterns, will most likely:
(A) Increase the General Fertility Rate.
(B) Decrease the completed family size of the affected cohorts.
(C) Increase the Total Fertility Rate.
(D) Have no impact on fertility.

189. Which of the following is the best description of the "fertility transition"?
(A) A woman's transition from being non-fecund to fecund at puberty.
(B) The shift in a population from high levels of fertility to low levels of fertility.
(C) The period of postpartum amenorrhoea.
(D) The change from using traditional to

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(B) The effect of marriage patterns.
(C) The effect of induced abortion.
(D) The effect of postpartum infecundability.

110. Arrange the following fertility measures in order of increasing refinement (from least to most refined):
1. General Fertility Rate (GFR)
2. Age-Specific Fertility Rate (ASFR)
3. Crude Birth Rate (CBR)
4. Total Fertility Rate (TFR)

(A) 3, 1, 2, 4
(B) 1, 3, 2, 4
(C) 3, 2, 1, 4
(D) 4, 2, 1, 3

111. The persistence of population growth even after fertility drops to replacement level is known as:
(A) Population stability
(B) Demographic dividend
(C) Population momentum
(D) Fertility transition

112. Consider the following statements about fertility analysis:
a. Reverse survival technique estimates past births from current child populations.
b. The Rele technique uses the P/F ratio to estimate fertility.
c. Coale-Trussell's model provides a standard pattern for age at marriage.
d. The Brass P1/F1 ratio is used for analyzing first birth data.

Which of the above statements are correct?
(A) a and d only
(B) a, b, and c
(C) b and c only
(D) a, c, and d

113. An increase in the mean age of widowhood in a country is a likely indicator of:
(A) Improving overall longevity and health conditions.
(B) Increasing mortality rates for males.
(C) Decreasing life expectancy.
(D) A rising divorce rate.

114. The Total Fertility Rate (TFR) is a 'hypothetical' measure because:
(A) It is based on assumptions that are never true.
(B) It assumes a woman survives through her entire reproductive life.
(C) It assumes period rates will apply to a woman throughout reproductive life.
(D) It is only calculated for imaginary populations.

115. A woman who has never conceived is considered to have:
(A) Primary sterility
(B) Secondary sterility
(C) Low fecundity
(D) High fertility

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116. Which of the following best describes the 'Decadal Synthetic Cohort Method' for SMAM?
(A) A method using data from a single census to create a hypothetical cohort.
(B) A method that tracks an actual cohort of people for ten years to observe behavior.
(C) A method that relies solely on vital registration data for marriages over a decade.
(D) A method comparing proportions single in age groups across two censuses ten years apart.

117. In the context of fertility, the term 'differentials' refers to:
(A) The mathematical process of calculating rates.
(B) The differences in fertility levels between various sub-groups of a population.
(C) The gap between desired and actual family size.
(D) The historical trend of fertility over time.

118. Which of these is an example of an 'Intercourse Variable' in the Davis-Blake framework?
(A) Use of contraception.
(B) Fetal mortality from involuntary causes.
(C) Age of entry into sexual union.
(D) Involuntary sterility.

119. A key advantage of the General Fertility Rate (GFR) over the Crude Birth Rate (CBR) is that the GFR's denominator includes only:
(A) The total population.
(B) Women of childbearing age.
(C) Married women.
(D) The mid-year male population.

(C) Calculating the Child-Woman Ratio
(D) Comparing the Crude Birth Rates

160. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The Total Fertility Rate (TFR) is considered a more refined measure of fertility than the Crude Birth Rate (CBR).
Reason (R): TFR is not affected by the age and sex composition of the population, whereas CBR is.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

161. A situation where a country's TFR is 1.5 would be described as:
(A) Above replacement level fertility
(B) At replacement level fertility
(C) Below replacement level fertility
(D) High fertility

162. The denominator for the Age-Specific Fertility Rate (ASFR) for the age group 25-29 is:
(A) The total mid-year population.
(B) The number of live births to women aged 25-29.
(C) The mid-year female population aged 25-29.
(D) The mid-year married female population aged 25-29.

163. The fertility-reducing effect of breastfeeding is captured in Bongaarts' model by which index?
(A) Cm (index of marriage)
(B) Cc (index of contraception)
(C) Ca (index of induced abortion)
(D) Ci (index of postpartum infecundability)

164. What is the fundamental difference between cohort and period fertility measures?
(A) Cohort measures track a real group over time, while period measures provide a snapshot at one point.
(B) Period measures are always more accurate than cohort measures.
(C) Cohort measures apply to men, while period measures apply to women.
(D) Period measures use census data, while cohort measures use survey data.

165. Arrange the following life events in the most likely chronological order for a woman in a traditional society.
1. Marriage
2. Birth of first child
3. Menopause
4. Widowhood
(A) 1, 2, 3, 4
(B) 1, 2, 4, 3
(C) 2, 1, 3, 4
(D) 1, 4, 2, 3

166. A primary reason for the decline in fertility in many developing countries, including India, is:
(A) An increase in infant mortality.
(B) A government mandate limiting families to one child.
(C) Increased adoption and effectiveness of contraceptive methods.
(D) A decline in the number of marriages.

167. A P/F ratio greater than 1 for younger women often suggests:
(A) That fertility has been rising.
(B) That fertility has been falling.
(C) That data quality is perfect.
(D) That younger women are over-reporting recent births.

168. The "intermediate variables" in the Davis and Blake framework are so named because:
(A) They are of medium importance in determining fertility.
(B) They stand between social/background factors and the actual outcome of fertility.
(C) They are difficult to measure.
(D) They apply only to the middle-income population.

169. What type of nuptiality data is essential for computing SMAM using the standard method?
(A) The age of each person at their first marriage.
(B) The number of marriages and divorces in a year.
(C) The proportion of the population single in each age group.
(D) The average duration of marriage.

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(B) 1.22
(C) 2.1
(D) 5.0

131. Which of the following scenarios would lead to the largest difference between the TFR and the TMFR in a population?
(A) A population where everyone marries at age 20 and stays married.
(B) A population where a large proportion of women never marry.
(C) A population with very low fertility rates both inside and outside marriage.
(D) A population where divorce is illegal.

132. Consider the following statements about nuptiality concepts:
a. Crude Marriage Rate is sensitive to the age structure of the population.
b. Age-Specific Marriage Rate provides a more detailed picture of marriage behavior than CMR.
c. SMAM can be calculated from the proportion of single individuals in successive age groups.
d. Coale's indices are primarily used to measure mortality.
Which of the above statements are correct?
(A) a, b, and c
(B) b, c, and d
(C) a, c, and d
(D) a, b, and d

133. The concept of 'replacement level fertility' is defined in terms of which measure?
(A) Crude Birth Rate (CBR)
(B) Total Fertility Rate (TFR)
(C) Gross Reproduction Rate (GRR)
(D) Net Reproduction Rate (NRR)

134. Which of the following is a potential socio-economic implication of a country experiencing prolonged below-replacement level fertility?
(A) A rapidly growing youth population.
(B) A shrinking labor force and an aging population.
(C) Increased pressure on the education system.
(D) A decrease in the dependency ratio.

135. The fundamental idea behind the Reverse Survival Technique is to:
(A) Project the future population forward in time.
(B) "Survive" the current child population backward to estimate births from which they came.
(C) Estimate life expectancy by reversing mortality rates.
(D) Calculate the probability of surviving from birth to a specific age.

136. The duration of Post-Partum Amenorrhoea is most strongly influenced by:
(A) The mother's age.
(B) The mother's education level.
(C) The intensity and frequency of breastfeeding.
(D) The sex of the newborn child.

137. Which of the following is an example of a "Gestation Variable" in the Davis-Blake framework?
(A) Use of contraception
(B) Fetal mortality from voluntary causes (induced abortion)
(C) Frequency of intercourse
(D) Age of entry into sexual union

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138. The Sex-Age Adjusted Birth Rate is a more refined measure than the Crude Birth Rate because it:
(A) Controls for the effects of a population's age and sex structure.
(B) Is easier to calculate from census data.
(C) Only considers births to married women.
(D) Can be used to forecast long-term population trends.

139. The P/F ratio is expected to be close to 1.0 in a population with:
(A) Rapidly declining fertility and accurate data.
(B) Constant fertility over time and accurate data.
(C) Rapidly increasing fertility and inaccurate data.
(D) High levels of migration and constant fertility.

140. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Fertility levels in India have shown a consistent decline over the last few

Assertion (A): Breastfeeding acts as a natural contraceptive.
Reason (R): Lactation prolongs the period of post-partum amenorrhoea, delaying the return of ovulation and menstruation.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

101. Which fertility measure provides an answer to the question: "How many children have women of a certain age had, on average, up to this point in their lives?"
(A) Total Fertility Rate (TFR)
(B) Age-Specific Fertility Rate (ASFR)
(C) Children Ever Born (CEB)
(D) Net Reproduction Rate (NRR)

102. The difference between "fertility" and "fecundity" is that:
(A) Fertility is the ability to conceive, while fecundity is the actual birth performance.
(B) Fecundity is the ability to conceive, while fertility is the actual birth performance.
(C) Fertility applies to women, while fecundity applies to men.
(D) The two terms are synonymous in demography.

103. If direct standardization and indirect standardization are used to compare the birth rates of City A and City B, and they yield different conclusions, what is the most likely reason?
(A) One of the methods must have been calculated incorrectly.
(B) The choice of standard population significantly impacts the results.
(C) The age-specific birth rate patterns are substantially different between cities.
(D) Indirect standardization is always more accurate than direct standardization.

104. Which of the following is a key feature of the Lee and Bulatoo framework of fertility, distinguishing it from earlier models?
(A) It focuses solely on biological determinants.
(B) It explicitly incorporates the demand for children and costs of fertility regulation.
(C) It is identical to the Davis and Blake framework.
(D) It only applies to developed countries.

105. "Birth order statistics" are particularly useful for analyzing:
(A) The age structure of a population.
(B) The progression towards smaller family sizes in a fertility transition.
(C) The rate of infant mortality.
(D) The prevalence of marriage.

106. A key difference between a cohort indicator like 'Completed Family Size' and a period indicator like 'Total Fertility Rate' is that:
(A) Completed Family Size reflects experiences of a real cohort over many years.
(B) Total Fertility Rate is always a more accurate measure of long-term trends.
(C) Completed Family Size is a hypothetical measure.
(D) Total Fertility Rate reflects the experiences of a real cohort.

107. Which of the following statements about nuptiality is incorrect?
(A) The crude marriage rate is a refined measure of marriage patterns.
(B) Age at marriage shows significant differentials by education and residence in India.
(C) Divorce and widowhood are events that terminate exposure to risk of conception within marriage.
(D) SMAM is a summary measure of the age at first marriage.

108. The main purpose of the Brass P1/F1 ratio technique is to:
(A) Estimate the total number of first births in a population.
(B) Check the consistency of and adjust data on the timing of the first birth.
(C) Project the future number of first-time mothers.
(D) Calculate the average age at first birth directly.

109. In Bongaarts' model of proximate determinants, which factor is represented by the index Cm?
(A) The effect of contraception.

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List II: (Represents)
1. Average number of children, period measure
2. Number of births per 1000 women of reproductive age
3. Number of daughters, accounting for mortality
4. Number of daughters, not accounting for mortality

(A) P-4, Q-3, R-1, S-2
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-4, R-2, S-1

151. An increase in the prevalence and duration of widowhood, especially at younger ages, would likely lead to:
(A) A decrease in the overall fertility of a population.
(B) An increase in the overall fertility of a population.
(C) No change in the fertility of a population.
(D) An increase in the age at marriage.

152. Which of the following is a key determinant of fertility that is considered a "background" or "distal" factor rather than a proximate one?
(A) Use of contraception.
(B) Duration of breastfeeding.
(C) Level of female education.
(D) Age at marriage.

153. A Total Marital Fertility Rate (TMFR) is calculated by summing which rates across the reproductive ages?
(A) Age-Specific Fertility Rates
(B) Age-Specific Marital Fertility Rates
(C) General Fertility Rates
(D) Crude Birth Rates

154. The Brass P/F ratio method is particularly valuable in countries where:
(A) Fertility has been constant for many decades.
(B) Vital registration systems are perfect and complete.
(C) Age reporting is highly accurate.
(D) Vital registration is incomplete but census or survey lifetime and recent birth data exists.

155. Consider the following statements regarding Indian nuptiality patterns:
a. The mean age at marriage for females has been steadily decreasing.
b. The gap in age at marriage between urban and rural areas is widening.
c. Widow remarriage is now more common and socially accepted than in the past.
d. Divorce rates are comparable to those in Western European nations.
e. There is a strong positive correlation between a woman's education and her age at marriage.

Which combination of statements is correct?
(A) a and d
(B) b and c
(C) c and e
(D) d and e

156. The Coale-Trussell Model provides a set of standard schedules for:
(A) Age patterns of mortality
(B) Age patterns of marital fertility
(C) Age patterns of migration
(D) Age patterns of divorce

157. Which of the following is NOT a measure of nuptiality?
(A) Crude Marriage Rate
(B) Singulate Mean Age at Marriage
(C) Order Specific Marriage Rate
(D) Child-Woman Ratio

158. The Lee and Bulatoo framework for fertility analysis is distinct because it incorporates the concepts of:
(A) Intercourse, conception, and gestation variables.
(B) The demand for children and the supply of children.
(C) Proximate determinants and their quantitative impact.
(D) Age patterns of marital fertility.

159. If a researcher wants to compare the birth rates of two populations while accounting for their different age structures, and has access to age-specific birth rates for both, which is the most appropriate method?
(A) Indirect Standardization
(B) Direct Standardization

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decades.
Reason (R): This decline is attributable to a combination of factors including increased female literacy, urbanization, and widespread availability and use of family planning methods.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

141. The formula for the Child-Woman Ratio typically uses which age groups?
(A) Children 0-9 and Women 15-49
(B) Children 0-4 and Women 15-44
(C) Children 0-4 and Women 15-49
(D) Children 0-14 and Women of all ages

142. What is the key information that Order-Specific Fertility Measures provide?
(A) The total number of children a woman has.
(B) The age at which women have their children.
(C) The contribution of specific birth ranks (1st, 2nd, etc.) to the overall fertility rate.
(D) The difference in fertility between married and unmarried women.

143. Which of the following statements about the Total Fertility Rate (TFR) is incorrect?
(A) It is a summary measure of age-specific fertility rates.
(B) It is a hypothetical measure of completed family size.
(C) It is unaffected by the age structure of the population.
(D) It is a cohort measure of fertility.

144. The study of marriage, its formation, its dissolution, and its incidence is called:
(A) Fertility
(B) Mortality
(C) Nuptiality
(D) Migration

145. Consider the sequence of demographic transitions for a country:
1. Fertility begins to decline.
2. Mortality begins to decline.
3. Population growth rate is high.
4. Population growth rate stabilizes at a low level.

What is the correct chronological order of these events in a classic demographic transition?
(A) 1, 2, 3, 4
(B) 2, 3, 1, 4
(C) 2, 1, 4, 3
(D) 1, 3, 2, 4

146. Which of the following is the most direct cause of a decrease in the Crude Birth Rate?
(A) A decrease in the number of women aged 15-49.
(B) A decrease in the number of live births.
(C) An increase in total population size while the number of births remains constant.
(D) Both B and C.

147. To compare the fertility of a young population with an old population, which measure would be most appropriate to use to avoid the confounding effect of age structure?
(A) Crude Birth Rate
(B) Total number of births
(C) Total Fertility Rate
(D) Child-Woman Ratio

148. Coale's indices of nuptiality were developed to analyze the impact of marriage patterns on:
(A) Mortality
(B) Migration
(C) Fertility
(D) Economic development

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149. In the context of SMAM calculation, what does the "synthetic cohort" approach assume?
(A) That the marriage patterns observed in a single census will persist for a hypothetical group.
(B) That mortality rates are zero for the cohort.
(C) That everyone in the cohort will eventually marry.
(D) That migration does not affect the cohort.

150. Match the fertility measures in List I with what they represent in List II and select the correct code.
List I: (Measure)
P. GRR
Q. NRR
R. TFR
S. GFR

170. Which fertility measure is calculated by summing the Age-Specific Marital Fertility Rates?
(A) Total Fertility Rate (TFR)
(B) Gross Reproduction Rate (GRR)
(C) Net Reproduction Rate (NRR)
(D) Total Marital Fertility Rate (TMFR)

171. Consider the following statements regarding fertility indicators:
a. CBR uses the total population as its denominator.
b. GFR's denominator is restricted to women in reproductive ages.
c. TFR is a measure of completed fertility for a real cohort.
d. NRR incorporates mortality, unlike GRR.
Which of the above statements are correct?
(A) a, b, and d
(B) a, c, and d
(C) b and d only
(D) All of the above

172. The difference between primary and secondary sterility is that:
(A) Primary sterility is lifelong inability to conceive, while secondary occurs after a prior conception.
(B) Primary sterility is voluntary, while secondary sterility is involuntary.
(C) Primary sterility applies to men, secondary to women.
(D) Primary sterility is temporary, while secondary sterility is permanent.

173. The Reverse Survival method of fertility estimation is most sensitive to errors in:
(A) The reporting of marital status.
(B) The reporting of age, especially for young children, and estimates of mortality.
(C) The reporting of income and education.
(D) The reporting of births in the last year.

174. Which of the following is a direct impact of an increase in the mean age at marriage on fertility?
(A) It increases the total number of years available for childbearing within marriage.
(B) It shortens the marital reproductive period where a woman is exposed to the risk of pregnancy.
(C) It has no impact on fertility.
(D) It increases the rates of marital fertility at all ages.

175. The fertility transition in India has been notably faster in the southern states compared to the northern states. This differential is an example of:
(A) A cohort effect.
(B) A period effect.
(C) Regional differentials in fertility.
(D) A failure of family planning programs.

176. What is the defining characteristic of the Net Reproduction Rate (NRR)?
(A) It measures the number of sons per woman.
(B) It measures generational replacement by accounting for both fertility and mortality.
(C) It is a measure of marital fertility only.
(D) It is based on the fertility experience of a real cohort.

177. The Rele method is an indirect technique that links which two demographic measures to estimate birth rates?
(A) P/F ratio and TFR
(B) Child-Woman Ratio and Life Expectancy
(C) SMAM and CBR
(D) GRR and NRR

178. What does "completed family size" refer to?
(A) The ideal family size reported in surveys.
(B) The Total Fertility Rate for a given year.
(C) The average number of children ever born to women who have finished childbearing years.
(D) The number of children a family plans to have.

179. Bongaarts' proximate determinants model quantifies the impact of various factors on:
(A) Total Fecundity
(B) Crude Birth Rate
(C) Total Fertility Rate
(D) Mortality rates

180. Match the models in List I with their associated concepts in List II and select the correct answer.
List I: (Author/Model)
P. Bongaarts
Q. Brass
R. Davis & Blake

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120. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The Net Reproduction Rate (NRR) is a better indicator of generational replacement than the Gross Reproduction Rate (GRR).
Reason (R): NRR accounts for the effect of mortality, which determines how many female babies will actually survive to childbearing age to replace their mothers.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

121. The value of the Net Reproduction Rate (NRR) can never be:
(A) Equal to 1.0
(B) Less than 1.0
(C) Greater than the Gross Reproduction Rate (GRR)
(D) Equal to zero

122. Which of the following is NOT a cross-sectional or period fertility indicator?
(A) Age-Specific Fertility Rate (ASFR)
(B) Children Ever Born (CEB)
(C) Crude Birth Rate (CBR)
(D) Total Fertility Rate (TFR)

123. The Coale's Index of nuptiality, Im, is derived from:
(A) Age-specific fertility rates.
(B) Age-specific proportions of women who are married.
(C) Crude marriage and divorce rates.
(D) The total number of marriages in a year.

124. The 'Rele Technique' provides an estimate of the Gross Reproduction Rate and birth rates by using:
(A) Marital duration data.
(B) Data on children ever born and children surviving.
(C) The Child-Woman ratio from census data.
(D) Age-specific marital fertility rates.

125. A woman who has given birth to one child but is unable to conceive again is said to have:
(A) Primary sterility
(B) Secondary sterility
(C) Low fecundity
(D) Low nuptiality

126. Match the terms in List I with their corresponding descriptions in List II and select the correct answer.
List I: (Term)
P. Nuptiality
Q. Fertility
R. SMAM
S. CBR
List II: (Description)
1. Live births per 1000 population
2. Average age at first marriage
3. Study of marriage patterns
4. Actual childbearing performance
(A) P-3, Q-4, R-1, S-2
(B) P-4, Q-3, R-2, S-1
(C) P-3, Q-4, R-2, S-1
(D) P-1, Q-2, R-3, S-4

127. What is the most significant demographic implication of a country's fertility level falling and remaining below the replacement level?
(A) Rapid population growth and a youth bulge.
(B) A stable age structure.
(C) Long-term population decline and aging.
(D) Increased school enrollments.

128. Bongaarts' model of proximate determinants aims to:
(A) Explain why people desire a certain number of children.
(B) Quantify inhibiting effects of factors like contraception and marriage patterns.
(C) Replace the Davis and Blake framework entirely.
(D) Estimate fertility using only census data.

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129. The Singulate Mean Age at Marriage (SMAM) is considered a measure for a:
(A) Real cohort
(B) Synthetic cohort
(C) Marriage cohort
(D) Divorce cohort

130. If the Total Fertility Rate (TFR) is 2.5, the Gross Reproduction Rate (GRR) will be approximately:
(A) 2.5

modern contraceptive methods.

190. What is the primary focus of Order Specific Fertility Measures?
(A) The age of the mother.
(B) The total number of children a woman has.
(C) The marital status of the mother.
(D) The parity of the mother at the time of birth (i.e. whether it is a 1st, 2nd, 3rd birth etc.).

191. Consider the following statements about nuptiality:
a. The Singulate Mean Age at Marriage (SMAM) is calculated from the proportions of never-married persons by age.
b. The Decadal Synthetic Cohort Method for SMAM uses data from two consecutive censuses.
c. Coale's Index 'Im' measures the proportion of women who marry.
d. An increase in the age at marriage generally leads to an increase in fertility.
e. The Crude Marriage Rate is not affected by the population's age structure.
Which combination of statements is correct?
(A) a, b, and c
(B) c, d, and e
(C) a, c, and e
(D) b, d, and e

192. When the Net Reproduction Rate (NRR) is equal to 1, it signifies:
(A) The population is shrinking.
(B) Each generation of daughters is exactly replacing the previous generation.
(C) The Gross Reproduction Rate is also 1.
(D) The Total Fertility Rate is 1.

193. The Coale-Trussell Model is an indirect method used to:
(A) Estimate mortality from orphanhood data.
(B) Fit a model schedule to observed marital fertility data to detect errors or estimate values.
(C) Estimate the level of contraceptive prevalence.
(D) Calculate the child-woman ratio.

194. The period immediately following childbirth, during which ovulation and menstruation are absent, is known as:
(A) Gestation
(B) Fecundity
(C) Post-partum Amenorrhoea
(D) Menarche

195. Which of the following is a COHORT indicator of fertility?
(A) Crude Birth Rate
(B) General Fertility Rate
(C) Total Fertility Rate
(D) Completed Family Size

196. The difference between GRR and NRR reflects the impact of which factor?
(A) Marriage patterns
(B) Contraceptive use
(C) Mortality
(D) Migration

197. Which of the following factors has contributed to declining trends in widowhood in India?
(A) A decline in the age at marriage.
(B) An increase in male life expectancy.
(C) A rise in divorce rates.
(D) An increase in the birth rate.

198. The 'P' in the P/F Ratio Technique refers to:
(A) Period fertility
(B) Parity-based fertility (a cohort measure)
(C) Paternal fertility
(D) Projected fertility

199. One of the main implications of below-replacement fertility is:
(A) A growing workforce.
(B) A larger base for the pension system.
(C) Population ageing and an increased old-age dependency ratio.
(D) A rising school-age population.

200. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The General Fertility Rate (GFF) is a more refined fertility measure than the Crude Birth Rate (CBR).
Reason (R): The denominator of the GFR is restricted to women in the reproductive age group, who are the population actually at risk of giving birth.
(A) Both A and R are true and R is the correct

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(D) It is based on interviewing a small, synthetic sample of the population.

257. What fundamental data is required for the standard calculation of SMAM?
(A) The total number of registered marriages in a year.
(B) Longitudinal data tracking individuals from birth to age 50.
(C) The proportion of the population that is divorced or widowed.
(D) The proportions of single individuals in successive age groups from a census.

258. How does the Decadal Synthetic Cohort Method for calculating SMAM differ from the standard Synthetic Cohort Method?
(A) It utilizes data from two consecutive censuses to observe changes over time.
(B) It requires data from only a single survey rather than a full census.
(C) It focuses only on individuals over the age of 50.
(D) It provides an estimate for the crude marriage rate instead of the mean age.

259. Which of the following best describes the conceptual meaning of the SMAM value?
(A) The age at which exactly 50% of the population is married.
(B) The total number of marriages expected in a synthetic cohort's lifetime.
(C) The average number of years a person remains single before their first marriage.
(D) The rate of marriage in the single most populous age group.

260. The paragraph mentions "Coale's indices of nuptiality" as another tool for analysis. What is their implied purpose?
(A) To provide standardized measures of marriage prevalence.
(B) To calculate the mean age of widowhood.
(C) To directly estimate the total fertility rate.
(D) To replace the need for calculating SMAM.

Direction : Please read the following source carefully.

The marriage patterns in India exhibit significant diversity, characterized by discernible levels, trends, and differentials. The age at marriage, a critical determinant of fertility, has shown a consistent upward trend over the past several decades, though substantial differentials persist across states, rural-urban residence, and socio-economic strata. While the legal age for marriage is established, social norms often result in variations. Beyond the initial formation of unions, the patterns of marital dissolution, namely divorce and widowhood, are also of demographic interest. Historically, divorce rates in India have been low compared to Western countries, but there is evidence of a gradual increase, particularly in urban areas. Widowhood, on the other hand, remains a significant social and demographic reality, especially for women, due to the age gap between spouses and higher male mortality at older ages. The prospects for widow remarriage vary considerably based on region, caste, and the age at which a woman is widowed. Analyzing these trends and differentials is crucial for understanding social change and its demographic consequences, including the impact on family structures and fertility. Data from sources like the Census provides the necessary information to study these complex patterns across the Indian landscape.

Based on the above source, attempt the following five questions.

261. According to the passage, which statement accurately describes the trend in age at marriage in India?
(A) It has been steadily decreasing across all sections of society.
(B) It has remained static for several decades with no significant change.
(C) It is uniform across all states due to strict enforcement of legal age limits.
(D) It shows a general upward trend, but with notable variations among different groups.

262. The text identifies "differentials" in marriage patterns. This term refers to:
(A) the legal differences between marriage and cohabitation.
(B) the variations in marriage patterns across different population subgroups.
(C) the time difference between marriage and first childbirth.
(D) the difference between male and female age at marriage.

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4. The Reverse Survival method is conceptualized.

(A) 4, 1, 2, 3
(B) 1, 2, 3, 4
(C) 4, 3, 2, 1
(D) 2, 3, 1, 4

211. Which of the following is NOT a 'proximate determinant' in Bongaarts' model?
(A) Socio-economic status
(B) Contraception
(C) Postpartum infecundability
(D) Proportion married

212. The fact that India's population continued to grow rapidly for decades even after the TFR began to decline is a classic example of:
(A) Demographic dividend
(B) Population momentum
(C) Below-replacement fertility
(D) Zero population growth

213. To calculate a direct standardized birth rate for population A, you need:
(A) Age-specific birth rates of A and the age structure of a standard population.
(B) The crude birth rate of A and the crude birth rate of a standard population.
(C) The age structure of A and the age-specific birth rates of a standard population.
(D) Only the age structure of population A and its total births.

214. The Singulate Mean Age at Marriage (SMAM) provides an estimate of:
(A) The average age of all married people in a population.
(B) The average age at first marriage for a synthetic cohort.
(C) The median age at which people get married.
(D) The average duration of a marriage.

215. What is the relationship between fecundity and fertility?
(A) They are the same.
(B) Fertility cannot exceed fecundity.
(C) Fecundity cannot exceed fertility.
(D) They are inversely related.

216. In the Davis-Blake framework, voluntary abstinence within marriage would be classified as an:
(A) Intercourse Variable
(B) Conception Variable
(C) Gestation Variable
(D) Background Variable

217. A high proportion of widows in a population can be an indicator of:
(A) High male mortality relative to female mortality, especially at older ages.
(B) High levels of female mortality.
(C) Very low age at marriage for women.
(D) A high rate of economic development.

218. The NRR is a more realistic measure of generational replacement than the GRR because:
(A) NRR uses marital fertility rates.
(B) NRR accounts for females who will not survive through reproductive ages.
(C) NRR includes migration in its calculation.
(D) NRR is a cohort measure while GRR is a period measure.

219. Consider the following statements about fertility measures:
a. ASFR allows for the analysis of the age pattern of fertility.
b. TMFR is based on the fertility experience of married women only.
c. The Child-Women ratio is an indirect measure of fertility often used when vital statistics are poor.
d. GRR is always smaller than NRR.
e. Replacement level fertility is defined as a TFR of exactly 2.0.

Which combination of statements is correct?
(A) a, b, and c
(B) c, d, and e
(C) a, d, and e
(D) a, b, and e

220. The primary purpose of Age Standardization is to:
(A) Increase the crude birth rate.
(B) Compare rates between populations with different age structures.
(C) Estimate the age of a population.
(D) Calculate the median age of childbearing.

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221. Which of the following is a major nuptiality trend observed in India over the last few decades?
(A) A sharp decline in the Singulate Mean Age at Marriage.
(B) A steady increase in the Singulate Mean Age at Marriage.
(C) A complete disappearance of child marriage.
(D) A convergence of rural and urban marriage ages.

222. The term 'birth order' refers to:
(A) The rank of a country based on its birth rate.
(B) The numerical rank of a live birth relative to prior births by that mother.
(C) The age group of the mother at birth.
(D) The order in which births are registered by the government.

223. What is the effect on fertility if a population shifts from a pattern of prolonged breastfeeding to early weaning and bottle-feeding, without a compensatory increase in contraceptive use?
(A) Fertility is likely to increase due to shorter birth intervals.
(B) Fertility is likely to decrease.
(C) There will be no effect on fertility.
(D) The Total Marital Fertility Rate will decrease.

224. Which statement about the fertility transition is most accurate?
(A) It involves a shift from high birth and death rates to low birth and death rates.
(B) It specifically refers to the decline of fertility from high to low levels.
(C) It is a process that has occurred identically in all countries.
(D) It is primarily driven by changes in mortality.

225. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The Child-Woman Ratio is a rough but useful measure of fertility.
Reason (R): Its calculation is subject to errors from age misreporting and under-enumeration of children, and it is also affected by infant and child mortality.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

226. What concept is measured by summing up the age-specific fertility rates for a single year and multiplying by the width of the age interval?
(A) Net Reproduction Rate
(B) Total Fertility Rate
(C) General Fertility Rate
(D) Completed Family Size

227. The mean age of widowhood calculated from census data reflects:
(A) The current age structure of the widowed population.
(B) The life expectancy of males.
(C) A prediction of future trends.
(D) The rate of remarriage.

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228. Which of the following is a key input for the Coale-Trussell model of fertility?
(A) The observed age-specific marital fertility rates of a population.
(B) The Child-Woman ratio.
(C) Data on contraceptive use.
(D) The proportion of the population that is single.

229. If the number of divorces in a population increases, while other factors remain constant, what is the likely impact on overall fertility?
(A) A negative impact, due to time spent outside of a marital union.
(B) A positive impact, as people may remarry and have more children.
(C) No impact, as divorce does not affect biological capacity.
(D) It will only affect the Crude Marriage Rate.

230. The indirect estimation technique that works by comparing cumulative fertility to period fertility is the:
(A) Reverse Survival method
(B) Rele technique
(C) P/F Ratio technique
(D) Lee-Bulatoo framework

231. The difference between "period" and "cohort" measures is that period measures refer to events

in a _____, while cohort measures refer to events for a _____.
(A) specific window; group of people followed over time.
(B) group followed over time; specific year or short period.
(C) single country; group of countries.
(D) historical context; future projection.

232. An NRR of 1.2 suggests that, in the long run, a population is likely to:
(A) Grow
(B) Shrink
(C) Remain stable
(D) Fluctuate randomly

233. The main advantage of ASMFR over ASFR is that it:
(A) Is easier to calculate.
(B) Measures fertility without the confounding effect of different proportions married.
(C) Includes non-marital births.
(D) Is an official government statistic.

234. In India, the state-level differentials in fertility are strongly correlated with differentials in:
(A) Male labor force participation.
(B) Female literacy and empowerment.
(C) Altitude and climate.
(D) The number of registered vehicles.

235. The concept of 'fecundity' is best described as:
(A) The biological potential to bear children.
(B) The number of children a woman has.
(C) The rate of childbearing in a population.
(D) The age at which a woman has her first child.

236. The decline of fertility in developed countries was part of a broader process known as the:
(A) Industrial Revolution
(B) Digital Revolution
(C) Demographic Transition
(D) Agricultural Revolution

237. Which of the following best describes the use of the Sex-Age Adjusted Birth Rate?
(A) To calculate the number of male births.
(B) To create a birth rate free from sex-age structure influence for comparability.
(C) To adjust birth rates for sex-selective abortion.
(D) To find the birth rate for a specific sex and age group.

238. In a country with significant mortality among women of reproductive age, the gap between GRR and NRR would be:
(A) Large
(B) Small
(C) Zero
(D) Negative

239. The information on "children ever born" collected in a census is an example of what kind of data?
(A) Period data
(B) Cohort data (cumulative fertility of real cohorts)
(C) Nuptiality data
(D) Mortality data

240. Match the concepts in List I with their examples or measures in List II and select the correct answer.
List I: (Concept)
P. Period Fertility Measure
Q. Cohort Fertility Measure
R. Nuptiality Measure
S. Proximate Determinant
List II: (Example/Measure)
1. Completed Family Size
2. Singulate Mean Age at Marriage
3. Total Fertility Rate
4. Contraceptive Prevalence
(A) P-3, Q-1, R-2, S-4
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-2, R-1, S-4
(D) P-1, Q-2, R-4, S-3

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241. A major challenge in using the Reverse Survival technique is the need for accurate:
(A) Marriage registration data.
(B) Estimates of child mortality.
(C) Data on parental education.
(D) Projections of future fertility.

242. "Post-Partum Amenorrhoea" directly affects fertility by influencing:
(A) The age at marriage.
(B) The length of the interval between births.
(C) The desire for more children.

(D) The probability of a multiple birth.

243. The Singulate Mean Age at Marriage (SMAM) was developed by:
(A) John Hajnal
(B) John Bongaarts
(C) Ansley Coale
(D) William Brass

244. If you have the number of live births and the total mid-year population for a country, which rate can you calculate?
(A) General Fertility Rate
(B) Total Fertility Rate
(C) Crude Birth Rate
(D) Net Reproduction Rate

245. Which of the following is NOT an implication of sustained below-replacement fertility?
(A) A decrease in the median age of the population.
(B) Potential strain on social security and health care systems.
(C) A shrinking of the total population size in the long run.
(D) A change in the shape of the population pyramid to be top-heavy.

246. Which of the following statements about the Davis and Blake framework is true?
(A) It is a quantitative model to predict fertility rates.
(B) It provides a qualitative classification of variables affecting fertility.
(C) It focuses only on the economic determinants of fertility.
(D) It was proposed as an alternative to Bongaarts' model.

247. The 'synthetic cohort' assumption is used in the calculation of which of the following measures?
(A) Completed Family Size and Children Ever Born
(B) Total Fertility Rate and Singulate Mean Age at Marriage
(C) Crude Birth Rate and General Fertility Rate
(D) Mean age of widowhood and divorce rate

248. The most direct cause of the difference between the Gross Reproduction Rate and the Total Fertility Rate is:
(A) The GRR only counts female births.
(B) The GRR accounts for mortality.
(C) The TFR only counts male births.
(D) The TFR is a cohort measure.

249. A trend of increasing widow remarriage in India would have what potential demographic impact?
(A) It would lower the mean age at marriage.
(B) It could increase the completed fertility of women widowed young.
(C) It would increase the rate of widowhood.
(D) It would have no effect on fertility levels.

250. Which of the following best describes the fertility transition in India?
(A) A diverse and ongoing process with significant variation between states.
(B) A completed process with all states at low fertility.
(C) A process that has not yet begun.
(D) A process that was reversed in the last decade.

Direction : Please read the following source carefully.

The study of nuptiality, or the patterns of marriage within a population, is a cornerstone of demographic analysis, primarily because of its direct influence on fertility. Demographers employ a variety of measures to quantify and compare marriage patterns across different populations and time periods. The most basic of these is the Crude Marriage Rate (CMR), which relates the total number of marriages in a given year to the mid-year population. While simple to compute, it is a coarse measure influenced by the population's age structure. To refine this analysis, Age-Specific Marriage Rates (ASMRs) are calculated, which provide the rate of marriage for specific age groups, offering a more detailed picture of marriage timing. Another key metric is the Order-Specific Marriage Rate, which focuses on the rate of first, second, or higher-order marriages. A crucial summary measure derived from these detailed rates is the Singulate Mean Age at Marriage (SMAM), a synthetic cohort measure that estimates the average age at first marriage for a population. This measure is particularly valuable as it can be calculated from census data on marital status by age,

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making it applicable even in contexts where direct registration of marriages is incomplete. Together, these measures provide a comprehensive toolkit for understanding the levels, timing, and patterns of marriage formation.

Based on the above source, attempt the following five questions.

251. Which of the following nuptiality measures is most susceptible to distortions caused by the age composition of a population?
(A) Age-Specific Marriage Rate (ASMR)
(B) Crude Marriage Rate (CMR)
(C) Singulate Mean Age at Marriage (SMAM)
(D) Order-Specific Marriage Rate

252. According to the text, what is the primary advantage of the Singulate Mean Age at Marriage (SMAM) as a demographic tool?
(A) It can be calculated using census data on marital status, bypassing the need for complete marriage registration.
(B) It exclusively measures the rate of second and third marriages.
(C) It provides a direct count of the total number of marriages in a country.
(D) It is the only measure that accounts for the influence of divorce on marriage patterns.

253. A demographer wishes to compare the timing of marriage among young adults aged 20-24 in two different countries. Which measure would be most appropriate for this specific task?
(A) Crude Marriage Rate (CMR)
(B) Singulate Mean Age at Marriage (SMAM)
(C) Age-Specific Marriage Rate (ASMR)
(D) Order-Specific Marriage Rate

254. Based on the paragraph, what is the principal reason for the academic focus on nuptiality in demography?
(A) Its direct connection to migration patterns.
(B) Its role in determining mortality rates.
(C) Its importance for economic forecasting.
(D) Its significant influence on fertility outcomes.

255. The Order-Specific Marriage Rate is designed to analyze which aspect of nuptiality?
(A) The average age at which people marry for the first time.
(B) The overall number of marriages relative to the total population.
(C) The sequence of marriages, such as first or subsequent unions.
(D) The frequency of marriage within specific age cohorts.

Direction : Please read the following source carefully.

The Singulate Mean Age at Marriage (SMAM) is a pivotal indicator in nuptiality studies, providing an estimate of the mean age at first marriage for a hypothetical cohort of people who marry according to the marriage patterns of a specific period. It is classified as a synthetic cohort measure because it constructs this average from cross-sectional data, typically a single census. The calculation method involves using the proportions of individuals who are single (never married) in successive age groups as recorded in the census. By observing the decline in the proportion of single individuals from one age group to the next, one can infer the rate at which marriage occurs. The SMAM essentially represents the average number of years lived in the single state by those who marry before a certain age (usually 50). Methodological variations exist to enhance its accuracy and applicability. The standard approach is the Synthetic Cohort Method. A notable adaptation is the Decadal Synthetic Cohort Method, which is used when data from two censuses, typically ten years apart, are available. This method can provide a more robust estimate by observing the changes in marital status for actual cohorts over the decade, thus refining the cross-sectional assumption of the single-census method. Coale's indices of nuptiality also provide standardized ways to measure marriage prevalence.

Based on the above source, attempt the following five questions.

256. Why is the Singulate Mean Age at Marriage (SMAM) referred to as a "synthetic cohort" measure?
(A) It exclusively uses data from multiple cohorts followed over several decades.
(B) It creates a hypothetical cohort's experience from cross-sectional data of a single period.
(C) It only applies to populations that have been synthetically generated by computer models.

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(D) A neutral effect, as divorced women are assumed to remarry instantly.

270. The analysis of widowhood trends in India, as described in the paragraph, reveals:
(A) uniform patterns of widowhood across the entire country.
(B) that widowhood is no longer a significant demographic event.
(C) that divorce has become a more common form of marital dissolution than widowhood.
(D) state-level variations reflecting differences in mortality and customs.

Direction : Please read the following source carefully.

The measurement of fertility relies on a set of well-defined indicators derived from specific sources of data, most notably vital registration systems and censuses. These indicators can be broadly categorized as cross-sectional or period measures, which provide a snapshot of fertility behavior at a particular point in time. The most fundamental of these is the Crude Birth Rate (CBR), calculated as the number of live births per 1,000 mid-year population. While widely available, the CBR is affected by the population's age and sex structure. To refine this, the General Fertility Rate (GFR) is used, which restricts the denominator to women in their reproductive ages (typically 15-49), making it a more accurate measure of fertility. For even greater precision, demographers use the Age-Specific Fertility Rate (ASFR), which calculates the birth rate for women within specific age groups (e.g., 20-24, 25-29). This measure is crucial for understanding the tempo of fertility. By summing the ASFRs across all reproductive age groups and multiplying by the width of the age interval, one can compute the Total Fertility Rate (TFR). The TFR represents the average number of children a woman would have if she were to experience the age-specific fertility rates of a given year throughout her reproductive life, making it a powerful summary indicator independent of age structure.

Based on the above source, attempt the following five questions.

271. Which fertility indicator is calculated by relating the number of births to the number of women in their reproductive years?
(A) Crude Birth Rate (CBR)
(B) Total Fertility Rate (TFR)
(C) General Fertility Rate (GFR)
(D) Age-Specific Fertility Rate (ASFR)

272. The Total Fertility Rate (TFR) is considered a powerful summary indicator primarily because:
(A) it is the easiest fertility measure to calculate.
(B) it is independent of the population's age structure.
(C) it directly reflects the number of male children born.
(D) it is based on the completed fertility of real cohorts.

273. A researcher wants to study the contribution of teenagers to overall fertility in a population. Which measure would be the most direct and appropriate for this purpose?
(A) The Crude Birth Rate for the entire population.
(B) The General Fertility Rate for women aged 15-49.
(C) The Total Fertility Rate for the year.
(D) The Age-Specific Fertility Rate for the 15-19 age group.

274. What is the principal limitation of the Crude Birth Rate (CBR) as a measure of fertility?
(A) It is heavily influenced by the age and sex composition of the population.
(B) It can only be calculated from survey data, not censuses.
(C) It does not account for multiple births (twins, triplets).
(D) It ignores the number of deaths occurring in the same year.

275. How is the Total Fertility Rate (TFR) conceptually derived?
(A) By averaging the number of children ever born to women aged 49.
(B) By dividing the Crude Birth Rate by the General Fertility Rate.
(C) By summing the Age-Specific Fertility Rates of a period and scaling the result.
(D) By tracking a single cohort of women throughout their entire reproductive life.

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263. What factor is mentioned as contributing significantly to the prevalence of widowhood in India?
(A) The low rate of divorce in rural areas.
(B) The increasing trend of widow remarriage.
(C) The age gap between spouses and higher male mortality at older ages.
(D) The decline in the overall age at marriage for women.

264. Based on the passage, what is the observed trend regarding divorce in India?
(A) Divorce rates are extremely high and comparable to Western countries.
(B) Divorce is a purely urban phenomenon with no presence in rural areas.
(C) Divorce rates have been declining steadily over the past decade.
(D) Divorce rates have been historically low but are showing a gradual increase.

265. What is highlighted as a key factor influencing the likelihood of widow remarriage?
(A) Variations based on region, caste, and age at widowhood.
(B) The national legal policy on remarriage.
(C) The overall fertility rate of the country.
(D) The woman's socio-economic status before her first marriage.

Direction : Please read the following source carefully.

The phenomena of widowhood and divorce, representing forms of marital dissolution, have significant demographic implications, particularly concerning fertility. In India, the levels and trends in widowhood are closely monitored, with state-level variations providing insights into regional disparities in mortality and marriage customs. An important analytical focus is the calculation of the mean age of widowhood, which can often be derived from Census data on marital status. Changes in the prevalence of widowhood or divorce directly affect the reproductive lifespan of women. A decrease in widowhood at younger ages, for instance, could potentially increase a woman's total exposure to the risk of conception, thereby positively influencing fertility. Conversely, an increase in divorce rates might have a mixed or negative effect, as it introduces periods of non-exposure to pregnancy risk between unions. Demographers study the impact of these changes on fertility to better understand population dynamics. The relationship is not one-directional; high fertility can also influence the social and economic consequences of widowhood. A comprehensive analysis requires examining data on the trends in marital dissolution and linking them to corresponding trends in fertility rates, providing a more nuanced picture of demographic transition.

Based on the above source, attempt the following five questions.

266. What is the primary reason for demographers to study changes in widowhood and divorce rates?
(A) To understand their impact on migration patterns.
(B) To analyze their effect on the reproductive lifespan and fertility.
(C) To predict changes in the national economy.
(D) To measure the effectiveness of marital counseling services.

267. According to the text, what is a potential fertility-related consequence of a declining mean age of marriage and lower mortality leading to less widowhood?
(A) A definite decrease in overall fertility rates.
(B) An increase in a woman's total time exposed to the risk of pregnancy.
(C) No significant impact on fertility, as it is determined by other factors.
(D) A shift in fertility to later ages without changing the total number of children.

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268. What source of data is mentioned as being useful for calculating the mean age of widowhood?
(A) Data on marital status from the Census.
(B) Hospital admission records.
(C) Vital registration systems for deaths.
(D) Small-scale ethnographic surveys.

269. The passage suggests that an increasing divorce rate could have what kind of effect on fertility?
(A) A universally positive effect by encouraging remarriage.
(B) A consistently negative effect by reducing family stability.
(C) An effect that could be mixed or negative due to interruptions in exposure to pregnancy risk.

explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

201. "Children Ever Born" data is typically collected through:
(A) Birth registration systems
(B) Death registration systems
(C) Censuses and demographic surveys
(D) Hospital administration records

202. The Davis and Blake framework grouped intermediate variables into three categories: intercourse, conception, and _____.
(A) Gestation/parturition
(B) Education
(C) Economy
(D) Environment

203. The primary purpose of using direct and indirect standardization for birth rates?
(A) To calculate the total number of births in a population.
(B) To forecast future birth trends with high accuracy.
(C) To compare fertility levels between populations with different age structures.
(D) To estimate the number of births to unmarried women.

204. A researcher finds that the P/F ratios for a country's survey are consistently around 1.2 for all age groups. What is a likely interpretation?
(A) Fertility has been constant, and the data is accurate.
(B) Fertility has been declining rapidly.
(C) There is likely under-reporting of recent births (F) relative to lifetime births (P).
(D) There is likely over-reporting of recent births (F) relative to lifetime births (P).

205. The Brass P1/F1 Ratio technique is a specialized method to check the consistency of data related to:
(A) All births
(B) Second and higher order births
(C) First births
(D) Marital births only

206. Which of the following is a defining feature of the fertility transition in India compared to that in early-industrializing European countries?
(A) It occurred at a much slower pace.
(B) It was heavily influenced by organized, state-sponsored family planning programs.
(C) It was driven primarily by a rise in the age at marriage, not contraception.
(D) It started at much higher levels of economic development.

207. Which statement best describes the relationship between TFR and TMFR?
(A) TFR is always higher than TMFR.
(B) TMFR is higher than TFR when not everyone is married during reproductive ages.
(C) TFR and TMFR are always equal.
(D) TMFR is TFR adjusted for mortality.

208. Match the indicators in List I with their focus in List II and select the correct answer.
List I: (Indicator)
P. Crude Marriage Rate
Q. SMAM
R. Order-specific Marriage Rate
S. Divorce Rate
List II: (Focus)
1. Average age at first marriage
2. Dissolution of marriage
3. Marriages per 1000 total population
4. Rate of first marriages
(A) P-3, Q-1, R-4, S-2
(B) P-1, Q-3, R-4, S-2
(C) P-3, Q-4, R-1, S-2
(D) P-1, Q-2, R-3, S-4

209. The term 'fecundability' describes:
(A) The actual number of live births.
(B) The physiological capacity to conceive.
(C) The monthly probability of conception.
(D) The inability to conceive.

210. Arrange the following fertility estimation milestones in a plausible chronological order of development and prominent use.
1. Brass develops the P/F Ratio Technique.
2. Rele develops a technique using the Child-Woman Ratio.
3. Coale and Trussell develop model fertility schedules.

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Beyond foundational period indicators, fertility analysis employs more specialized measures to capture different dimensions of reproduction. The Age-Specific Marital Fertility Rate (ASMFR) refines the ASFR by restricting the denominator to only married women within each age group, thus measuring fertility within the context of marriage. Summing these rates across the reproductive ages yields the Total Marital Fertility Rate (TMFR), which represents the hypothetical number of children a woman would bear if she remained married throughout her reproductive years. To understand the potential for population growth, demographers use reproduction rates. The Gross Reproduction Rate (GRR) is similar to the TFR but considers only female births, indicating how many daughters a woman would have, on average, under current fertility schedules. The Net Reproduction Rate (NRR) further refines this by also incorporating female mortality rates from birth through the reproductive ages. The NRR measures the number of daughters a newborn girl is expected to bear during her lifetime, accounting for her own chances of survival. An NRR of 1.0 indicates replacement level fertility, where each generation of women is exactly replacing itself. This concept of replacement level fertility is a crucial benchmark for assessing long-term population stability.

Based on the above source, attempt the following five questions.

276. What key distinction separates the Age-Specific Fertility Rate (ASFR) from the Age-Specific Marital Fertility Rate (ASMFR)?
(A) ASMFR uses only currently married women in its denominator.
(B) ASMFR includes only male births, whereas ASFR includes all births.
(C) ASMFR is a cohort measure, while ASFR is a period measure.
(D) ASMFR can only be calculated using census data.

277. The Net Reproduction Rate (NRR) is considered a more realistic measure of generational replacement than the Gross Reproduction Rate (GRR) because it accounts for:
(A) male fertility.
(B) the prevalence of marriage.
(C) migration of women into or out of the population.
(D) the possibility of female mortality before the end of the reproductive period.

278. An NRR value of exactly 1.0 signifies that:
(A) the population is growing rapidly.
(B) the fertility level is just sufficient for the female population to replace itself.
(C) each woman is having exactly one child.
(D) mortality rates are higher than fertility rates.

279. If a researcher wants to estimate the total number of children a woman would have if she experienced current fertility rates and remained married throughout her entire reproductive span, which indicator should be used?
(A) Total Fertility Rate (TFR)
(B) Gross Reproduction Rate (GRR)
(C) Total Marital Fertility Rate (TMFR)
(D) Net Reproduction Rate (NRR)

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280. The Gross Reproduction Rate (GRR) specifically measures the average number of what?
(A) Total live births per woman.
(B) Surviving children per woman.
(C) Male births (sons) per woman.
(D) Female births (daughters) per woman.

Direction : Please read the following source carefully.

Fertility analysis differentiates between period indicators, which capture fertility at a single point in time, and cohort indicators, which track the reproductive history of a group of individuals born in the same year. Key cohort indicators include 'Children Ever Born' (CEB) and 'Completed Family Size'. CEB refers to the total number of live births a woman has had up to the point of a survey or census, while completed family size refers to the CEB for women who have finished their reproductive years, typically those aged 45-49. These measures provide a historical, longitudinal perspective on fertility. However, comparing fertility rates between populations can be misleading if their age structures differ. To address this, demographers use age standardization or adjustment. The Direct Method of Standardization applies a standard population's age structure to the age-specific birth rates of the populations being compared, yielding standardized birth rates that show what the

birth rate would be if they all had the same age structure. The Indirect Method is used when age-specific rates for a population are unavailable or unreliable. It uses a standard set of age-specific rates to calculate the expected number of births, which is then compared to the observed number. The Sex-Age Adjusted Birth Rate is another refined measure accounting for population composition.
Based on the above source, attempt the following five questions.

281. What is the fundamental difference between a period fertility indicator and a cohort indicator like 'Children Ever Born'?
(A) Period indicators provide a cross-sectional snapshot, while cohort indicators offer a longitudinal history.
(B) Period indicators measure past trends, while cohort indicators predict future fertility.
(C) Period indicators are always higher than cohort indicators.
(D) Period indicators apply only to married women, while cohort indicators apply to all women.

282. The 'Completed Family Size' is specifically defined as the number of children ever born to which group?
(A) All women currently in their reproductive years.
(B) Women who have finished their reproductive years (e.g., aged 45-49).
(C) Women who have just entered their reproductive years (age 15-19).
(D) A hypothetical cohort experiencing current fertility rates.

283. What is the primary purpose of using age standardization techniques like the Direct and Indirect methods?
(A) To calculate the Total Fertility Rate more accurately.
(B) To enable meaningful comparison of birth rates between populations with different age structures.
(C) To estimate the number of children a woman will have in the future.
(D) To measure the completed family size of a real cohort.

284. A researcher would choose the Indirect Method of Standardization over the Direct Method under which condition?
(A) When the age-specific birth rates of the study population are not available.
(B) When the standard population's age structure is unknown.
(C) When the researcher wants to compare more than two populations simultaneously.
(D) When the total number of births in the study population is unknown.

285. A 'Sex-Age Adjusted Birth Rate' is described as a refined measure because it:
(A) only considers the female population.
(B) adjusts for births that occur outside of marriage.
(C) accounts for the specific sex and age composition of a population.
(D) is the only measure that can predict cohort fertility.

Direction : Please read the following source carefully.

The determinants of fertility are complex, encompassing a range of biological and social factors. A key analytical approach involves examining the mechanisms that directly influence the risk of conception, known as intermediate variables or proximate determinants. Among the biological factors, Post-Partum Amenorrhoea (PPA), the temporary period of infertility following childbirth, is significant. The duration of PPA is closely linked to the intensity and duration of breastfeeding, which naturally suppresses ovulation. Sterility, both primary (the inability to ever bear a child) and secondary (the inability to conceive after a previous birth), also sets a biological limit on reproduction. Fecundity refers to the physiological capacity to conceive, which varies among individuals and across the reproductive lifespan. The Davis and Blake Intermediate Variable Framework, a seminal model in fertility analysis, provides a systematic way to organize these factors. It categorizes the determinants into three broad stages: factors affecting exposure to intercourse ('intercourse variables'), factors affecting exposure to conception ('conception variables'), and factors affecting gestation and successful parturition ('gestation variables'). This framework helps demographers

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to deconstruct how various social, economic, and cultural factors indirectly influence fertility by operating through a finite set of these intermediate biological and behavioral variables.

Based on the above source, attempt the following five questions.

286. According to the passage, what is the relationship between breastfeeding and Post-Partum Amenorrhoea (PPA)?
(A) Breastfeeding shortens the duration of PPA.
(B) PPA is a medical condition that prevents breastfeeding.
(C) There is no established link between breastfeeding and PPA.
(D) The practice of breastfeeding is a primary determinant of the length of PPA.

287. The Davis and Blake Framework classifies intermediate variables into three main categories. Which of the following is one of these categories?
(A) Economic variables.
(B) Educational variables.
(C) Factors affecting exposure to conception.
(D) Political stability variables.

288. How does the concept of 'fecundity' differ from 'fertility'?
(A) Fecundity is the actual reproductive performance, while fertility is the potential.
(B) Fecundity is the physiological capacity to conceive, while fertility is the actual number of births.
(C) Fecundity applies only to males, while fertility applies only to females.
(D) Fecundity and fertility are interchangeable terms for the same concept.

289. What is the primary analytical purpose of the Intermediate Variable Framework proposed by Davis and Blake?
(A) To directly measure the Total Fertility Rate of a population.
(B) To rank countries based on their level of economic development.
(C) To prove that fertility is determined solely by biological factors.
(D) To explain how broad social factors influence fertility through direct biological and behavioral mechanisms.

290. The term 'primary sterility' as described in the text refers to:
(A) the inability to ever bear a child.
(B) the inability to conceive after having had one or more children.
(C) a temporary period of infertility following childbirth.
(D) a deliberate choice to remain childless.

Direction : Please read the following source carefully.

Building upon earlier models, John Bongaarts developed a more quantitative framework of Proximate Determinants of Fertility, which simplified the Davis-Blake framework into a more parsimonious and measurable model. Bongaarts identified four key proximate determinants that explain most of the variation in fertility levels among populations: marriage patterns, contraceptive use and effectiveness, prevalence of induced abortion, and the duration of postpartum infecundability (largely determined by breastfeeding). For situations where fertility data is incomplete or defective, demographers rely on indirect methods of estimation. The P/F Ratio Technique, developed by William Brass, is a classic example. It compares cohort fertility data (P), representing past or cumulative fertility (e.g., children ever born), with period fertility data (F), representing current fertility (e.g., from birth registration). A consistent ratio across age groups suggests data is accurate, while a diverging pattern can be used to adjust the current fertility rates. A specific application of this is the Brass P1/F1 Ratio Technique, which focuses on the earliest age group to estimate fertility. Other methods like the Coale-Trussell Model for Age Pattern of Fertility and the Reverse Survival Technique are also employed. The Rele Technique provides another avenue for estimation, often using child-woman ratios from census data.

Based on the above source, attempt the following five questions.

291. Bongaarts' Proximate Determinants model is described as a more parsimonious version of the Davis-Blake framework. What are the four key determinants it identifies?
(A) Fecundity, sterility, mortality, and migration.
(B) Education, income, urbanization, and female employment.

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ANSWERS

1. (B) The study of marriage patterns, including rates, ages at marriage, and dissolution.
Nuptiality refers to the demographic study of marriage as a social and biological phenomenon within a population. It encompasses the frequency of marriages, the average ages at which individuals first enter into unions, and the rates of marital dissolution through divorce or death. Analyzing these patterns is essential for understanding population dynamics, as marriage significantly influences the duration of exposure to the risk of childbearing.

2. (A) 1,000 mid-year population.
The Crude Birth Rate is a fundamental measure used to represent the frequency of births within a specific population over a designated period, usually one year. It is calculated by dividing the total number of live births by the mid-year population and multiplying by a constant of one thousand. This measure is described as crude because it includes the entire population regardless of age or gender.

3. (C) It estimates the mean age at first marriage for a hypothetical cohort using current age patterns.
The Singulate Mean Age at Marriage is a cross-sectional measure that utilizes census data on marital status to estimate the average age at first marriage. It employs a synthetic cohort approach, assuming that a group of individuals will experience the current age-specific proportions of single people throughout their lives. This method is particularly useful when longitudinal data on individual marriage histories are unavailable in national surveys.

4. (D) Its denominator is restricted to the population actually at risk of childbearing.
The General Fertility Rate offers a more precise analysis than the basic birth rate by refining the denominator used in its calculation. While the basic rate considers the total population, this refined measure focuses specifically on women within the reproductive age range, typically fifteen to forty-nine years. By targeting the group biologically capable of childbearing, it provides a clearer picture of fertility levels within a society.

5. (C) Economic and industrial production records
Primary sources for studying marriage patterns include national censuses, vital registration systems, and specialized sample surveys. Censuses provide comprehensive data on marital status by age and sex, while vital registrations record the actual number of marriage events annually. Conversely, economic and industrial production records track financial activity and manufacturing output, which do not provide direct demographic information regarding the formation or dissolution of marriages.

6. (D) Statement I is false, but Statement II is true.
The Total Fertility Rate is not an age-standardized measure in the traditional sense, though it eliminates the effect of age structure by summing age-specific rates. It represents the average number of children a woman would bear if she survived her reproductive years and experienced the current fertility rates at each age. Consequently, the second statement accurately describes its interpretation as a hypothetical period measure of fertility.

7. (D) Age-Specific Fertility Rate (ASFR)
To calculate the fertility rate for a distinct age, such as twenty-five, demographers use the Age-Specific Fertility Rate. This measure relates the number of births to women of a particular age group to the mid-year population of women in that same age group. It provides a detailed view of how fertility varies throughout the reproductive lifespan, which broader measures like the crude or general rates cannot.

8. (A) Both A and R are true and R is the correct explanation of A.
Delaying the age at marriage typically leads to a reduction in fertility levels because it shortens the total timeframe in which a woman is exposed to the risk of conception. In societies where childbearing primarily occurs within marital unions, a later start to reproductive life naturally

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growth is at its maximum.
(B) The level of fertility (TFR of about 2.1) required for a population to replace itself generationally.
(C) The lowest possible fertility rate a population can experience.
(D) The average fertility level of all developed countries combined.

299. Which of the following is identified as a major societal implication of sustained below-replacement level fertility?
(A) A rapid increase in the youth population.
(B) Population aging and potential long-term population decline.
(C) A decrease in the demand for healthcare services.
(D) A surplus in the labor market leading to lower unemployment.

300. According to the text, why is the study of below-replacement fertility considered a "critical area of policy-relevant demographic research"?
(A) Because it has significant consequences for social security, healthcare, and labor markets.
(B) Because it only affects a small number of developing countries.
(C) Because it leads to a more balanced age structure in the population.
(D) Because it simplifies the challenges of economic planning.

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34. (A) Data on the age structure of the population, specifically the Child-Woman Ratio.
The Rele Technique is an indirect demographic method used to estimate fertility levels when detailed birth records are unavailable. It utilizes the child-woman ratio, derived from the age and sex distribution of a census, to calculate the gross reproduction rate and corresponding birth rates. This technique is based on the mathematical relationship between the proportion of young children in a population and the underlying fertility.

35. (C) 1,000 mid-year population.
The Crude Marriage Rate serves as a basic measure of the frequency of marriage formation within a population. It is calculated by taking the total number of marriages recorded during a specific year and dividing it by the total mid-year population, then multiplying by one thousand. Like other crude rates, it provides a general overview but does not account for the specific age and sex composition.

36. (B) a, c, e
Marriage patterns significantly influence fertility levels in various ways. Higher divorce rates can reduce cumulative fertility by limiting the time women spend in unions. Conversely, the remarriage of widows can increase their completed fertility by extending their exposure to the risk of conception. Additionally, the crude marriage rate treats all marriage events equally, regardless of whether they are first-time unions or subsequent marriages following dissolution.

37. (C) The female population is not producing enough daughters to replace itself.
The Net Reproduction Rate is a critical indicator of generational replacement that accounts for both fertility and mortality. An NRR value of less than one point zero indicates that, given current conditions, each generation of mothers will be replaced by a smaller number of daughters who survive to childbearing age. If this trend persists, it signifies that the population will eventually begin to decline in size.

38. (B) To model the standard age pattern of fertility.
The Coale-Trussell model is a demographic tool used to represent and analyze the typical patterns of marital fertility across different age groups. It provides a mathematical framework for comparing observed fertility data against standard schedules of natural and controlled fertility. This model is particularly useful for detecting the presence of family limitation practices and for estimating fertility parameters in populations where registration data might be incomplete.

39. (D) Temporary infertility following a birth without ovulation or menstruation.
Post-partum amenorrhoea is a physiological state of temporary infertility that occurs in women immediately after childbirth. During this period, the normal hormonal cycles are disrupted, leading to the absence of both ovulation and menstruation. The duration of this state varies significantly between individuals and is most heavily influenced by the frequency and intensity of breastfeeding, which helps delay the return of fertility and lengthen birth intervals.

40. (A) Both A and R are true and R is the correct explanation of A.
The Total Marital Fertility Rate focuses exclusively on the childbearing experiences of married women, who generally have higher birth rates. In contrast, the Total Fertility Rate considers the entire female population, including single, widowed, or divorced women who may have zero fertility during those periods. Consequently, when a significant portion of the population is unmarried, the marital rate will naturally exceed the broader general rate.

41. (B) The physiological inability to conceive a child.
In the context of fertility studies, sterility denotes the biological or physiological condition of being unable to produce offspring. It is distinct from the voluntary choice to avoid pregnancy through the use of contraception. Sterility can be primary, where an individual has never been able to conceive, or secondary, where the inability to conceive occurs after one or more successful pregnancies or births.

42. (B) The timing and quantum of first births.
The Brass P1/F1 Ratio Technique is a specialized demographic method designed to evaluate and adjust data specifically concerning first-time births. By comparing cumulative data on first births with recent reports of first-order births,

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limits the number of children born. Therefore, the physiological and social span of reproduction is directly truncated by marital postponement.

9. (C) The number of children ever born to women who have passed reproductive years.
Completed Family Size is a cohort measure that reflects the total number of live births a group of women has experienced by the end of their childbearing years. It provides a retrospective account of actual reproductive performance rather than intentions or current period trends. This indicator is essential for understanding long-term fertility shifts and the ultimate impact of family planning and social changes on generations.

10. (A) Total Fertility Rate (TFR)
The Total Fertility Rate is derived by aggregating the age-specific fertility rates for a single year across all reproductive age intervals. If the data is organized in five-year age groups, the sum of these rates must be multiplied by five to account for the width of the interval. This resulting value indicates the average number of children a hypothetical woman would have under current conditions.

11. (D) The proportion of women who will eventually marry.
Coale's Index of Marriage, designated as Im, is a demographic measure used to assess the prevalence of marriage within a population. It specifically quantifies the extent to which marriage patterns reduce the maximum potential fertility relative to a standard of high natural fertility. This index reflects the proportion of women in their reproductive years who are currently married, indicating the societal tendency toward union formation.

12. (A) a and d only
The General Fertility Rate is more refined than the Crude Birth Rate because it focuses on the population at risk. Additionally, a Net Reproduction Rate of exactly one signifies that a generation of mothers is successfully replacing itself with a new generation of daughters. However, the Total Fertility Rate is independent of age structure, and the Gross Reproduction Rate specifically ignores the effects of mortality.

13. (C) Age-Specific Marital Fertility Rate (ASMFR)
The Age-Specific Marital Fertility Rate specifically links the number of live births to women of a certain age who are currently in a marital union. By using only married women in the denominator, this measure isolates childbearing behavior within marriage from the broader population. This is particularly useful in demographic studies to understand how birth spacing and contraceptive use fluctuate among couples at different stages.

14. (D) NRR accounts for mortality on the female cohort, while GRR does not.
Both indicators measure the average number of daughters a woman is expected to bear under current fertility conditions. The primary distinction lies in how they handle survival probabilities. The Gross Reproduction Rate assumes that every newborn female will survive until the end of her reproductive years. In contrast, the Net Reproduction Rate incorporates age-specific mortality rates, reflecting the actual likelihood that daughters will survive to reproduce.

15. (A) Female literacy is negatively correlated with the age at marriage.
Extensive demographic research indicates that female literacy and education levels are positively correlated with the age at marriage. As women achieve higher levels of schooling, they often postpone entering into marital unions to pursue career goals or personal development. Other observed trends in India include higher marriage ages in urban settings and significant regional differences, which contrast with the incorrect claim regarding a negative correlation.

16. (A) P-2, Q-1, R-4, S-3
Matching fertility measures with their denominators reveals their level of refinement. The crude rate uses the total mid-year population, while the general rate focuses on women aged fifteen to forty-nine. The total fertility rate relates to a hypothetical cohort without considering mortality. Finally, the net reproduction rate is the most refined as it incorporates mortality into its hypothetical cohort calculation to assess generational replacement levels.

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17. (B) A hypothetical group experiencing current marriage patterns throughout life.
The synthetic cohort method is a demographic tool used to estimate lifelong patterns from data collected at a single point in time. It creates a hypothetical group of individuals and assumes they will experience the age-specific rates observed during a particular period throughout their entire lives. This allows demographers to generate summary measures, such as the mean age at marriage, without following a real group.

18. (A) The fertility level at which a population exactly replaces itself between generations.
Replacement level fertility describes the specific rate of childbearing required for a population to maintain its size over time without migration. It ensures that each generation of parents is replaced by an equal number of children who survive to reproductive age. In developed nations, this is typically represented by a value of approximately two point one, accounting for child mortality and the slight imbalance in sex ratios.

19. (C) The number of births in a past period based on the current number of children.
The Reverse Survival Technique is an indirect demographic method used to estimate fertility levels when birth registration is unreliable. It involves taking the current number of children in a specific age group from a census and working backward using mortality data to determine the original number of births. This allows researchers to reconstruct past birth trends and calculate approximate birth rates for earlier years.

20. (D) Children Ever Born (CEB)
Children Ever Born is a cohort indicator that records the cumulative reproductive history of a specific group of women. Unlike period measures that look at births during a single year, this measure captures the actual number of children born to women up to a certain point in their lives. It is often used to assess completed fertility among women who have finished their reproductive years.

21. (C) To compare fertility levels between populations with different age structures.
Standardization is a critical statistical process used to eliminate the confounding effects of age and sex composition when comparing demographic rates. Since the crude birth rate is heavily influenced by the proportion of people in reproductive ages, comparing two different regions requires an adjustment. Direct or indirect standardization allows researchers to see what the rates would be if both populations had the same underlying age structure.

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22. (A) Both A and R are true and R is the correct explanation of A.
The Child-Woman Ratio serves as a valuable proxy for fertility in regions where vital registration systems are incomplete or non-existent. Because it only requires basic age and sex data from a single census, it is easier to calculate than rates requiring annual birth records. It relates the number of young children to the number of women of reproductive age, providing a snapshot of recent fertility.

23. (D) Intermediate Variables
In their influential framework, Davis and Blake categorized the factors through which social and economic conditions affect fertility into eleven intermediate variables. These variables are the direct biological and behavioral mechanisms that determine childbearing outcomes. They grouped these into three broad categories: factors affecting intercourse, factors affecting conception, and factors affecting gestation. This conceptual model remains a foundation for modern demographic analysis and fertility research.

24. (A) Level of female education.
John Bongaarts identified four primary proximate determinants that account for the majority of variations in fertility levels across different populations. These include the proportion of women in unions, the use and effectiveness of contraception, the prevalence of induced abortion, and the duration of postpartum infecundability. While female education is a significant background factor that influences these determinants, it is not considered a direct proximate mechanism.

25. (C) Evaluating the quality of fertility data and adjusting it.
The P/F Ratio Technique, developed by William Brass, is a powerful indirect method used to assess the accuracy of reported fertility data. It compares cumulative fertility derived from

children ever born data with period fertility derived from recent birth reports. By analyzing the consistency between these two sets of information, demographers can detect errors such as the under-reporting of births and apply necessary corrections.

26. (A) 2, 4, 1, 3
Calculating the Total Fertility Rate follows a specific logical sequence. First, data must be collected on the number of births by the mother's age and the total female population in each age group. These figures are then used to calculate the individual age-specific fertility rates. Finally, these rates are summed across the reproductive lifespan to derive the summary measure representing the total fertility rate.

27. (D) The physiological capacity to conceive and bear children.
In demography, fecundity specifically refers to the biological potential or physical ability of an individual or a couple to reproduce. It is distinct from fertility, which describes the actual childbearing performance or the number of children produced. A person may be fecund but have low fertility due to personal choices, social factors, or the use of contraception to prevent pregnancy and childbirth.

28. (B) A negative effect, decreasing overall fertility.
Widowhood effectively terminates a woman's exposure to the risk of conception within a marital union. If a significant number of women become widowed at younger ages during their peak reproductive years and do not remarry, their total duration of childbearing is shortened. This reduction in the exposure period leads to a decrease in the overall number of children born in the population, lowering general fertility.

29. (C) Two consecutive censuses.
The Decadal Synthetic Cohort Method is an adaptation of the standard marriage age calculation designed to account for changes over time. By utilizing data from two censuses conducted ten years apart, demographers can analyze the transitions in marital status for the same age cohorts as they grow older. This approach provides a more dynamic and accurate estimate of marriage patterns compared to using a single census.

30. (D) The duration and intensity of breastfeeding.
Postpartum infecundability refers to the period after childbirth during which a woman is biologically unable to conceive. In the Bongaarts model, this factor is primarily determined by breastfeeding practices. Frequent and intense breastfeeding suppresses the hormones necessary for ovulation, thereby extending the interval between births. This natural mechanism serves as a significant biological constraint on fertility in populations where modern contraceptive use is limited.

31. (A) Total Fertility Rate (TFR).
Period indicators provide a snapshot of demographic events occurring within a specific timeframe, usually one year. The Total Fertility Rate is a classic example, as it summarizes the age-specific fertility rates observed during a single period. In contrast, measures like children ever born or completed family size are cohort indicators, as they reflect the cumulative reproductive experiences of real groups of women over time.

32. (B) The decline in fertility was rapid, often aided by state family planning programs.
Unlike the gradual demographic shifts seen in Western nations, the fertility transition in many developing countries occurred much faster. This rapid decline was largely driven by active government interventions and organized family planning initiatives designed to stabilize population growth. While social factors like education played a role, the widespread availability of modern contraception through state-supported programs was a primary catalyst for the significant reduction in birth rates.

33. (B) A shrinking labor force and an aging population.
When a country experiences fertility rates consistently below the replacement level, the size of younger generations begins to decrease relative to older ones. This shift leads to an aging population structure and a gradual reduction in the number of working-age individuals available to support the economy. Over time, this demographic trend places significant pressure on social security systems, healthcare services, and overall economic productivity and growth.

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(C) Marriage, contraception, abortion, and postpartum infecundability.
(D) Intercourse, conception, gestation, and parturition.

292. What is the fundamental principle of the P/F Ratio Technique for fertility estimation?
(A) It compares cumulative cohort fertility (P) with current period fertility (F) to check for consistency and make adjustments.
(B) It extrapolates future fertility based on past trends.
(C) It exclusively uses the fertility of the oldest age groups to estimate the TFR.
(D) It relies on comparing the fertility of males (P) and females (F).

293. In the context of indirect estimation, what does the "P" in the P/F Ratio typically represent?
(A) The period fertility rate for a specific year.
(B) The proportion of the population that is married.
(C) The projected population size for the next decade.
(D) The past, cumulative fertility reported by cohorts (e.g., children ever born).

294. The passage mentions several indirect methods for fertility estimation. Which method is specifically cited as using child-woman ratios from census data?
(A) The Coale-Trussell Model.
(B) The Rele Technique.
(C) The Brass P1/F1 Ratio Technique.
(D) The Reverse Survival Technique.

295. The primary purpose of using indirect estimation techniques like the P/F Ratio is for situations where:
(A) fertility is well above the replacement level.
(B) population growth is negative.
(C) direct data from vital registration systems is deficient or unreliable.
(D) cohort and period fertility rates are identical.

Direction : Please read the following source carefully.

The global demographic landscape has been shaped by the fertility transition, a historical shift from high to low levels of fertility and mortality. This transition occurred first in developed countries and is now underway at various stages in most developing countries, including India. The transition in India is not uniform, exhibiting significant variations by state, region, and socioeconomic group, reflecting the diverse drivers of fertility change across the country. As fertility falls, many populations eventually reach or dip below the replacement level of fertility, which is the TFR (approximately 2.1 children per woman) at which a population exactly replaces itself from one generation to the next, assuming constant mortality and no migration. Sustained below-replacement level fertility has profound demographic and societal implications. These include population aging, where the proportion of older persons increases relative to younger ones, and potentially, long-term population decline. Such demographic shifts create challenges for social security systems, healthcare provision, and labor markets. Understanding the dynamics of fertility transition and the consequences of very low fertility is therefore a critical area of policy-relevant demographic research, requiring careful analysis of trends in both developed and developing nations.

Based on the above source, attempt the following five questions.

296. What is the defining characteristic of the 'fertility transition'?
(A) A shift from low fertility to high fertility.
(B) A stabilization of fertility rates at a high level.
(C) A rapid increase in both mortality and fertility rates.
(D) A historical shift from high to low levels of fertility.

297. The passage states that the fertility transition in India is:
(A) uneven, with significant variations across different states and groups.
(B) complete and uniform across the entire nation.
(C) happening at the same pace as it did in developed countries.
(D) not occurring, with fertility rates remaining high everywhere.

298. What is meant by "replacement level fertility"?
(A) The fertility level at which population

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demographers can identify inconsistencies in the timing and reporting of these events. This focus on first births is essential for understanding transitions into motherhood and the overall tempo of fertility in a population.

43. (D) Factors affecting socio-economic status ('Background Variables').
The Davis and Blake framework identifies eleven intermediate variables that directly determine fertility levels, grouped into three main categories. These include factors affecting exposure to sexual intercourse, factors affecting the likelihood of conception, and factors affecting the outcome of pregnancy and parturition. Socio-economic factors such as education, income, and residence are considered background variables that influence fertility indirectly by acting through these specific biological and behavioral intermediate mechanisms.

44. (B) Are not affected by the age and sex structure of the population.
Age-Specific Marriage Rates offer a more refined analysis of nuptiality patterns compared to the crude rate. By relating marriages within specific age groups to the population of the same age, these rates eliminate the confounding effects of a population's age and sex distribution. This refinement allows for more accurate comparisons of marriage behavior across different regions or over time, regardless of underlying demographic differences.

45. (B) The economic costs and benefits of children as a central component.
The Lee and Bulatoo framework for analyzing fertility is known for its integration of economic perspectives into demographic models. It emphasizes how the perceived costs and benefits of children influence parental decisions regarding family size. This model examines the demand for children, the potential supply of children, and the costs associated with fertility regulation, providing a comprehensive view of the decision-making process behind childbearing.

46. (C) TFR - a summary measure of period age-specific fertility rates.
The Total Fertility Rate serves as a summary period measure that combines the age-specific fertility rates observed during a single year. It represents the average number of children a woman would have if she experienced those current rates throughout her reproductive life. Other measures, like the general fertility rate, are also period-based, while the child-woman ratio is typically derived from census data to estimate recent fertility levels.

47. (C) Net Reproduction Rate (NRR)
The Net Reproduction Rate is the demographic measure that specifically quantifies generational replacement. It calculates the average number of daughters a newborn female would bear if she experienced current fertility and mortality rates throughout her life. By incorporating survival probabilities, it determines whether a generation of mothers is producing enough surviving daughters to replace itself, which is essential for assessing long-term population growth or decline.

48. (C) The rates of occurrence of first births, second births, third births, etc.
Order-specific fertility measures provide detailed information on childbearing patterns by classifying births according to their rank or parity. These measures track the frequency of first-order births, second-order births, and so on, within a population. This level of detail is crucial for demographers to understand the transition from larger to smaller families and to analyze changes in the timing and spacing of children.

49. (B) It is heavily influenced by the age and sex composition of the population.
The primary limitation of the Crude Birth Rate is its dependence on the overall structure of the population. Because it uses the total mid-year population as its denominator, it includes individuals who are not at risk of childbearing, such as children, the elderly, and men. Consequently, two populations with the same underlying fertility behavior can have very different crude rates if their age distributions are dissimilar.

50. (A) P-3, Q-1, R-2, S-4
Matching demographic concepts with their definitions clarifies the distinctions between biological potential and actual performance. Fecundity refers to the physiological capacity to reproduce, while fertility denotes the actual

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rank or parity within a family. This data allows demographers to track how many women are having their first, second, or subsequent children. Analyzing these trends is vital for understanding the progression of the fertility transition, as a decline in higher-order births often signifies a societal shift toward smaller family sizes and increased birth control.

83. (B) When age-specific birth rates are not available, but total births and age structure are known.
Indirect standardization is the preferred method when detailed age-specific fertility rates for a study population are missing or unreliable. In this situation, demographers use the age-specific rates from a standard population and apply them to the age distribution of the study population to calculate expected births. This technique allows for meaningful comparisons between different regions by accounting for their varied age structures despite the lack of comprehensive local birth data.

84. (B) Conception variables
In the Davis and Blake framework, fecundity and infecundity resulting from involuntary causes are classified as conception variables. These biological factors directly influence the physical capacity to conceive a child, regardless of social or behavioral choices. Along with other variables like the use of contraception and breastfeeding, they determine the likelihood that sexual intercourse will lead to a successful pregnancy, forming a critical link in the chain of fertility determinants.

85. (A) 4, 3, 1, 2
A typical female fertility history follows a chronological sequence of biological and social events. It begins with menarche, marking the onset of physiological reproductive capacity. In many traditional societies, this is followed by entry into a marital union, which marks the beginning of social exposure to childbearing. Subsequently, the woman may experience her first birth and continue childbearing until her last birth, which concludes her active reproductive history before menopause.

86. (B) It is influenced by the age, sex, and marital status composition of the population.
The Crude Marriage Rate is a limited measure because its denominator includes the entire population, many of whom are not eligible for marriage. Factors such as a high proportion of children or an imbalanced sex ratio can distort the rate, making it an unreliable indicator for comparing different populations or tracking trends over time. More refined measures, like age-specific rates, are needed to isolate actual behavioral changes from shifts in population structure.

87. (C) Population projections.
Direct sources for fertility analysis include vital registration systems that record births as they occur, national censuses that ask about children ever born, and demographic surveys like the NFHS. These sources provide primary data on actual reproductive events and histories. In contrast, population projections are secondary outputs that use current data to estimate future trends. While projections are useful for planning, they are not direct records of fertility events themselves.

88. (B) Child-Woman Ratio (CWR)
When demographers use census data on children aged zero to four and women aged fifteen to forty-nine, they are calculating the Child-Woman Ratio. This indirect measure serves as a proxy for fertility by relating the number of young survivors to the number of women in their reproductive years. While not as precise as birth rates derived from registration systems, it is a valuable tool for assessing recent fertility levels when primary data is missing.

89. (C) Statement I is true, but Statement II is false.
An increasing Singulate Mean Age at Marriage is a clear indicator that individuals are postponing marriage to later in life. However, a higher age at marriage does not automatically cause a lower Gross Reproduction Rate, although it often contributes to it by reducing exposure. The reproduction rate is also heavily influenced by other factors like contraceptive use and desired family size, meaning the relationship between marriage timing and total fertility is complex.

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incorrect, as higher education typically leads to the postponement of marital unions.

59. (D) To account for both mortality and the unequal sex ratio at birth.
Replacement level fertility is slightly higher than two point zero children per woman because it must account for several biological and demographic factors. First, more boys are born than girls, so a slightly higher total rate is needed to produce enough daughters. Second, some children will unfortunately die before reaching reproductive age. These combined factors mean that a rate of approximately two point one is required for generational replacement.

60. (A) Age-specific birth rates of the study population and the age structure of a standard population.
Direct standardization is a statistical procedure used to adjust birth rates for differences in age structure. It requires the age-specific fertility rates of the population being analyzed and the age distribution of a designated standard population. By applying these rates to the standard population, demographers can calculate a standardized rate that reflects underlying fertility levels, independent of the actual age composition of the groups being compared.

61. (C) Bongaarts' Proximate Determinants Model
John Bongaarts developed a quantitative framework to explain variations in fertility levels by identifying four key proximate determinants. These factors include marriage patterns, the use of contraception, the prevalence of induced abortion, and the duration of postpartum infecundability. His model allows researchers to calculate indices that measure the inhibiting effect of each factor, providing a clear mathematical understanding of how biological and behavioral mechanisms control childbearing outcomes.

62. (A) Both A and R are true and R is the correct explanation of A.
Fertility rates in India vary significantly between different states and social groups due to the uneven distribution of developmental factors. Variations in female literacy, degrees of urbanization, and the availability of healthcare and family planning services directly influence reproductive behavior. These socio-economic disparities create a diverse demographic landscape where some regions have reached very low fertility levels while others continue to experience much higher birth rates.

63. (B) The age-sex distribution of the current population, particularly of young children.
The Reverse Survival method is an indirect demographic technique used to estimate past birth rates when direct registration data is poor. Its primary input is the age and sex distribution of the population from a census, with a specific focus on the number of young children. By applying mortality estimates to these children, demographers can "reverse" their survival back to the time of birth to determine original cohorts.

64. (C) A cross-sectional estimate of the average age of currently widowed or divorced persons.
When derived from census data, the mean age of widowhood or divorce typically provides a snapshot of the average age of all individuals who are currently in those marital states. This cross-sectional measure reflects the current demographic composition of the widowed and divorced population rather than the specific age at which these events occurred. It is influenced by past mortality trends, marriage ages, and the rates of remarriage in the population.

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65. (B) 1, 4, 2, 3
Nuptiality measures vary in their level of demographic refinement and ability to account for population structure. The crude marriage rate is the least refined as it uses the entire population. Order-specific rates and age-specific marriage rates provide more detail by focusing on specific events and age groups. The singulate mean age at marriage is the most refined summary measure, as it uses age-specific proportions to estimate the average timing of first unions.

66. (A) (Number of children aged 0-4 / Number of women aged 15-49) × 1000
The Child-Woman Ratio is a commonly used indirect measure of fertility that relates the number of young children to the number of women in their reproductive years. It is typically calculated by dividing the count of children aged zero to four by the count of women aged fifteen to forty-nine and multiplying by a factor of one thousand. This ratio provides a rough estimate of

within a population are improving, which keeps marital unions intact for a greater portion of the reproductive lifespan.

114. (C) It assumes period rates will apply to a woman throughout reproductive life.
The Total Fertility Rate is called a hypothetical or synthetic measure because it summarizes the birth rates observed during a single year. It represents the average number of children a woman would have if she survived her entire reproductive life and experienced each of those current age-specific rates at the appropriate time. In reality, no woman experiences a single year's rates over her entire lifetime, as demographic conditions are constantly changing.

115. (A) Primary sterility
Primary sterility is the demographic and biological term for the condition in which a woman or a couple has never been able to conceive a child. This is distinct from secondary sterility, which refers to the inability to conceive after one or more successful pregnancies. Understanding the prevalence of primary sterility in a population is important for assessing the underlying health and biological reproductive potential of the community, independent of social choices.

116. (D) A method comparing proportions single in age groups across two censuses ten years apart.
The Decadal Synthetic Cohort Method for estimating the mean age at marriage utilizes data from two consecutive censuses conducted a decade apart. By comparing the proportion of people who remain single in each age group across the two time points, demographers can analyze how marital status changes as a specific cohort ages. This dynamic approach provides a more accurate reflection of nuptiality trends than calculations based on a single point in time.

117. (B) The differences in fertility levels between various sub-groups of a population.
In demography, fertility differentials refer to the variations in birth rates observed between different social, economic, or geographic groups. These differences may be based on factors such as education level, rural or urban residence, religion, or income. Analyzing these differentials is essential for identifying the underlying drivers of demographic change and for designing targeted public health and family planning interventions that address the specific needs of diverse populations.

118. (C) Age of entry into sexual union.
In the Davis and Blake framework, intercourse variables include those factors that determine whether and when individuals enter into sexual unions. The age of entry into a union is a primary intercourse variable because it defines the start of a woman's exposure to the risk of conception. Other variables in this category include the amount of time spent in unions and the frequency of intercourse, all of which directly affect childbearing outcomes.

119. (B) Women of childbearing age.
The General Fertility Rate provides a more refined measure of fertility than the Crude Birth Rate because it narrows the population being analyzed. By using only women in their reproductive years as the denominator, it excludes those who are not biologically at risk of childbearing, such as men, children, and the elderly. This refinement makes the GFR more sensitive to the actual fertility behavior within the population and allows for better comparisons between regions.

120. (A) Both A and R are true and R is the correct explanation of A.
The Net Reproduction Rate is the superior measure for assessing generational replacement because it realistically accounts for the impact of mortality. While other measures might assume that all offspring survive, the NRR incorporates the probability that a newborn girl will live to complete her own reproductive years. This provides a clear picture of whether a population is producing enough surviving daughters to replace the current generation of mothers.

121. (C) Greater than the Gross Reproduction Rate (GRR)
The Net Reproduction Rate is derived by applying age-specific survival probabilities to the Gross Reproduction Rate. Since the probability of survival is always less than or equal to one, the NRR will mathematically always be less than or equal to the GRR. It can be equal to one if replacement is exact, but it can never exceed the GRR because that would imply a survival probability greater than one hundred percent.

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childbearing age. This situation highlights the significant role that high female mortality plays in limiting generational replacement despite relatively high fertility levels.

75. (B) The denominator of ASMFR is restricted to currently married women in the specific age group.
The primary difference between these two measures lies in the population used as the denominator for calculation. While the Age-Specific Fertility Rate includes all women in a given age group, the Age-Specific Marital Fertility Rate focuses exclusively on those who are currently married. This refinement isolates the birth patterns occurring within marital unions, providing a clearer understanding of reproductive behavior among couples by removing the influence of non-marital status.

76. (A) a and e
Biological and behavioral factors are both essential in determining fertility levels. Postpartum amenorrhoea is a natural biological state following childbirth that delays the return of fertility, thereby influencing the spacing between births. Additionally, modern demographic models, such as the Bongaarts framework, identify the use of contraception as a key proximate determinant that directly reduces birth rates. Other terms, like sterility and fecundity, have specific biological meanings unrelated to voluntary choice.

77. (A) Im (proportion marrying)
Coale's Index of Nuptiality, designated as Im, measures the extent to which marriage patterns influence the potential for childbearing. Factors such as a higher average age at marriage, increased rates of divorce, and higher prevalence of widowhood all reduce the proportion of women who are currently in marital unions. Consequently, these trends directly lower the value of the Im index, reflecting a decrease in the overall exposure to the risk of conception.

78. (A) Significant regional and socio-economic disparities in the pace and level of fertility decline.
India's fertility transition is not a uniform national event but rather a collection of diverse regional trends. Some states, particularly in the south, have reached very low fertility levels, while others in the north still experience higher rates. These disparities are driven by varying levels of social development, education, and access to healthcare. This complexity makes it essential to study sub-national data to understand the true nature of demographic change in India.

79. (C) P/F Ratio Technique
The P/F Ratio Technique is a prominent indirect demographic method used to evaluate and adjust fertility estimates. It relies on the conceptual comparison between cumulative fertility, represented by the number of children ever born (P), and period fertility, derived from births reported in the last year (F). By analyzing the ratio between these two measures, demographers can identify reporting biases and more accurately determine the current levels and patterns of childbearing.

80. (A) Both A and R are true and R is the correct explanation of A.
The Gross Reproduction Rate measures the average number of daughters born per woman, assuming every daughter survives to the end of her reproductive years. In contrast, the Net Reproduction Rate incorporates age-specific mortality probabilities, accounting for those who will not survive to reproduce. Because some deaths are inevitable in any real population, the NRR will always be less than or equal to the GRR, providing a more realistic measure of generational replacement.

81. (C) An increase in the old-age dependency ratio.
Sustained fertility levels below the replacement level lead to a fundamental shift in a population's age structure. As fewer children are born, the base of the population pyramid narrows, while improvements in longevity increase the proportion of elderly individuals. This demographic aging results in a higher old-age dependency ratio, where a smaller working-age population must support a larger number of retired people, creating significant economic and social challenges for the future.

82. (B) The analysis of births classified by whether they are the first, second, third, etc. child of the mother.
Birth order statistics provide a detailed view of fertility by categorizing births according to their

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recent fertility levels when reliable birth records are unavailable.

67. (C) Fertility
In demography, fertility is the term used to describe the actual reproductive performance of a population, specifically the production of live births. It is distinct from fecundity, which refers to the biological potential or capacity to have children. While fecundity sets the upper limit for childbearing, fertility is the observed outcome, which is influenced by a complex interplay of biological, social, economic, and behavioral factors.

68. (C) Using data from two consecutive censuses to account for temporal changes and mortality.
The Decadal Synthetic Cohort Method was introduced to improve the accuracy of marriage age estimates by using data from two successive censuses. This approach allows demographers to follow the transition of marital status for specific age cohorts over a ten-year period. By incorporating changes between censuses, this method provides a more dynamic representation of nuptiality patterns and helps account for the effects of mortality on the observed proportions of single individuals.

69. (D) Rural or urban residence.
The Davis and Blake framework identifies eleven intermediate variables that directly impact fertility outcomes, grouped into intercourse, conception, and gestation categories. These include factors like age at marriage, use of contraception, and fetal mortality. In contrast, rural or urban residence is considered a background or distal variable. Such background factors influence fertility only indirectly by acting through one or more of the specific biological and behavioral intermediate variables.

70. (C) The rate at which never-married people enter their first marriage.
Order-specific marriage rates provide a detailed look at nuptiality by classifying marriage events based on their rank. Specifically, the rate of first marriages focuses on individuals who have never been married before, measuring the frequency at which they enter their first union. This measure is essential for understanding the timing and prevalence of the initial formation of families, which is a primary determinant of subsequent fertility levels.

71. (A) P-2, Q-1, R-4, S-3
Linking demographic frameworks with their core concepts highlights the evolution of fertility analysis. Davis and Blake introduced the idea of intermediate variables, while Bongaarts developed the quantitative proximate determinants model. Coale and Trussell created model age patterns for fertility, and the Rele technique focuses on estimating birth rates from the child-woman ratio. These diverse tools allow demographers to analyze childbearing from various biological, behavioral, and statistical perspectives.

72. (A) It reflects cumulative fertility over a short period and not completed fertility.
Using children ever born data from younger women is problematic for estimating current fertility because it only captures their reproductive experiences up to that point. Since these women are still in their reproductive years, their cumulative fertility is incomplete and does not represent their ultimate family size. This measure is also sensitive to the timing and spacing of births, making it an unreliable indicator of period fertility trends or future reproductive outcomes.

73. (C) The probability of conceiving in a given menstrual cycle.
Fecundability is a specific demographic and biological concept that measures the likelihood of a woman conceiving during a single menstrual cycle. It represents the efficiency of the reproductive process and is influenced by factors such as age, frequency of intercourse, and underlying health. This measure is distinct from fecundity, which is the general potential to reproduce, and fertility, which is the actual number of children born over time.

74. (B) High fertility exists but high female mortality precedes end of reproductive years.
The gap between the Gross Reproduction Rate and the Net Reproduction Rate reflects the impact of mortality. A GRR of one point five indicates a high average number of daughters born per woman, but an NRR of zero point nine shows that many of these daughters do not survive to

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90. (C) The number of daughters a cohort of women would have, ignoring mortality.
The Gross Reproduction Rate is a refined fertility measure that focuses exclusively on the production of female offspring. It represents the average number of daughters a woman would bear during her lifetime if she experienced current fertility rates and survived until the end of her reproductive years. By ignoring mortality, it isolates the childbearing potential of a population and provides a measure of how many future mothers are being born.

91. (C) b, c, e
Modern fertility analysis relies on several key frameworks that examine the mechanisms of childbearing. Bongaarts' model identified four main proximate determinants that explain most variations in fertility, while Davis and Blake categorized their intermediate variables into three broad groups. Additionally, the Lee and Bulatoo framework introduced economic considerations, such as the demand for children and the costs of birth control, providing a more comprehensive understanding of the factors that drive demographic shifts.

92. (C) An Age-Specific Fertility Rate
A fertility rate that is calculated specifically for a five-year age group, such as women aged twenty to twenty-four, is known as an Age-Specific Fertility Rate. This measure provides a detailed look at childbearing intensity at different stages of the reproductive lifespan. By analyzing these rates across all age groups, demographers can understand the typical age pattern of fertility in a population, which is essential for making accurate population projections and comparisons.

93. (B) Her age at the time of divorce and whether she remarries.
The impact of marital dissolution on an individual's total fertility is primarily determined by how much reproductive time is lost. If a woman is divorced at a young age and does not remarry, her total years of exposure to the risk of conception are significantly reduced, lowering her completed family size. However, if she remarries quickly or is older at the time of divorce, the overall effect on her lifetime fertility may be minimal.

94. (C) It is a hypothetical cohort experiencing period-specific rates of a short window.
In demography, a synthetic cohort is a hypothetical group used to summarize the rates observed during a specific period. Instead of following real individuals over many years, researchers assume that a single group will experience all the age-specific marriage or fertility rates currently being recorded. This allows for the calculation of useful summary measures, like the total fertility rate, which provide a snapshot of current demographic conditions as if they were lifelong experiences.

95. (C) Male height
Fertility levels and trends are influenced by a variety of social, economic, and regional factors. In India, variables such as female literacy, education, state of residence, and urban or rural location show strong correlations with childbearing patterns. In contrast, biological traits like male height have no established demographic link to fertility outcomes. Factors that affect women's status and access to services are far more critical in determining the pace and level of fertility decline.

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96. (B) Singulate Mean Age at Marriage (SMAM)
The Singulate Mean Age at Marriage can be directly calculated from census data on the proportion of people who have never married across different age groups. This indirect method estimates the average age at first marriage by analyzing how the percentage of single individuals declines as the cohort gets older. It is a standard tool for demographers to assess marriage timing in a population, especially when detailed administrative records of marriage ages are not available.

97. (B) 1.46
The Gross Reproduction Rate measures the average number of daughters born per woman. It is calculated by multiplying the Total Fertility Rate by the proportion of female births. With a sex ratio of one hundred and five males per one hundred females, the probability of a female birth is approximately zero point four eight eight. Multiplying this by a TFR of three point zero yields a GRR of approximately one point four six daughters per woman.

bearing of children. Sterility is defined as the inability to conceive, and postpartum amenorrhoea represents the temporary state of infertility that follows childbirth. Understanding these terms is fundamental to accurate demographic analysis and the study of human reproduction.

51. (D) Proportion of women in each age group who have never been married.
To calculate the Singulate Mean Age at Marriage using the standard method, demographers require census data on the proportion of the population that is single in each age group. By analyzing these proportions across the reproductive lifespan, one can estimate the average age at which individuals transition from the single to the married state. This indirect approach is essential when direct records of marriage ages are not available.

52. (A) Age-Specific Marital Fertility Rates (ASMFR)
The Total Marital Fertility Rate is a summary measure derived by aggregating the age-specific marital fertility rates across the reproductive years. This indicator represents the average number of children a woman would have if she remained married throughout her entire childbearing period and experienced current marital fertility levels. It is a vital tool for comparing childbearing intensity among married couples across different populations and time periods.

53. (B) It extends the period of post-partum amenorrhoea, thus increasing birth intervals.
Breastfeeding has a significant biological impact on fertility by naturally suppressing the hormonal cycles necessary for ovulation. Frequent and intensive nursing extends the duration of postpartum amenorrhoea, which is the period of temporary infertility following childbirth. By lengthening the interval between births, breastfeeding acts as a natural mechanism that can lower overall fertility levels in populations where other forms of contraception are not widely used.

54. (D) High fertility to low fertility within a population.
The fertility transition refers to the historical shift within a population from high levels of childbearing to much lower levels. This process is usually driven by social and economic development, improvements in child survival, and the widespread adoption of modern contraceptive methods. It is a core component of the broader demographic transition, which also involves a corresponding decline in mortality rates over time.

55. (C) Completed Family Size (CFS)
Completed Family Size is a cohort measure of fertility, representing the total number of children born to a group of women who have finished their reproductive lives. Unlike period indicators such as the crude birth rate or the total fertility rate, which provide snapshots of fertility within a single year, this measure provides a retrospective view of actual lifetime childbearing for a specific generation.

56. (C) Period fertility (P) with cohort fertility (F) as reported in the same survey.
The P/F Ratio Technique is an indirect method used to evaluate and adjust fertility data. It works by comparing cumulative fertility data, which reflects the reproductive history of cohorts, with period fertility data derived from reports of births in the year preceding the survey. This comparison allows demographers to detect reporting errors, such as birth omissions, and ensures more accurate estimates of current fertility levels.

57. (A) Provide a measure of fertility standardized for population sex and age structure.
The Sex-Age Adjusted Birth Rate is a refined demographic measure designed to provide a more accurate comparison of fertility across different populations. By accounting for variations in both the sex ratio and the age distribution, it eliminates the confounding effects of population structure. This adjustment allows researchers to isolate and compare the actual childbearing tendencies of different groups, making it superior to the crude birth rate.

58. (A) a and b only
Marriage patterns in India show that while divorce rates are rising, they remain significantly lower than in Western societies. Additionally, the prevalence of widowhood has declined over time, largely due to improvements in general health and increased life expectancy for both men and women. The claim that education is negatively correlated with marriage age is

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is occurring, as it indicates that more people are successfully using family planning to achieve their desired family size.

106. (A) Completed Family Size reflects experiences of a real cohort over many years.
The primary difference between cohort and period indicators lies in the group of people they represent. Completed Family Size is a cohort measure that tracks the actual lifetime reproductive history of a real group of women who have finished childbearing. In contrast, the Total Fertility Rate is a period indicator that uses a synthetic cohort to summarize the birth rates observed during a single year. Cohort measures provide a realistic view of generational change.

107. (A) The crude marriage rate is a refined measure of marriage patterns.
The crude marriage rate is considered a limited demographic measure because it uses the total population as its denominator, including those not at risk of marrying. More refined measures, like the singulate mean age at marriage, provide a clearer picture of nuptiality patterns. Other statements correctly identify that education and residence influence marriage age in India, and that divorce and widowhood terminate the risk of conception, making the claim about refinement incorrect.

108. (B) Check the consistency of and adjust data on the timing of the first birth.
The Brass P1/F1 ratio technique is a specialized demographic tool used to evaluate the quality of data concerning first-time births. By comparing cumulative reports of first births with recent birth records, demographers can identify errors such as the under-reporting or misdating of these events. This adjustment process is essential for accurately understanding the start of childbearing in a population, which significantly influences the overall pace and level of fertility.

109. (B) The effect of marriage patterns.
In the Bongaarts model of proximate determinants, the index Cm represents the inhibiting effect of marriage on fertility. It quantifies how much the total fertility rate is reduced because not all women of reproductive age are currently in a marital union. A lower value for Cm indicates that marriage patterns, such as a late age at marriage or high divorce rates, are significantly lowering the overall birth rate from its theoretical maximum.

110. (A) 3, 1, 2, 4
Fertility measures vary in their level of demographic refinement and sensitivity to population structure. The crude birth rate is the least refined as it uses the entire population. The general fertility rate improves on this by focusing on women of reproductive age. Age-specific fertility rates provide even more detail by looking at specific age groups. Finally, the total fertility rate is the most refined summary measure, as it eliminates the influence of age composition altogether.

111. (C) Population momentum
Population momentum is the demographic phenomenon where a population continues to grow for several decades even after fertility has dropped to the replacement level. This occurs because the large generations born during periods of high fertility have not yet completed their reproductive years. As these individuals enter childbearing age, they produce a large number of births relative to deaths, causing continued growth until the older, smaller cohorts are eventually replaced.

112. (A) a and d only
Demographic analysis uses several specialized techniques to estimate fertility. The reverse survival technique is an indirect method that works backward from the current child population to estimate past births. Similarly, the Brass P1/F1 ratio is specifically designed for evaluating data related to first-order births. However, the Rele technique uses the child-woman ratio rather than the P/F ratio, and the Coale-Trussell model is primarily focused on fertility patterns rather than marriage schedules.

113. (A) Improving overall longevity and health conditions.
An increase in the average age at which widowhood occurs is a positive demographic indicator of improved public health and longevity. As life expectancy for men and women rises, the likelihood of a spouse dying early in the marriage decreases. This shift indicates that people are living longer and that the health conditions

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98. (B) P-3, Q-1, R-2, S-4
Indirect demographic methods allow researchers to estimate fertility when data is limited. The P/F Ratio Technique compares cumulative and period fertility to assess accuracy. The Reverse Survival method uses the census age distribution of young children to estimate past births. The Rele Technique derives fertility levels from the child-woman ratio. Finally, the Coale-Trussell Model uses standard patterns to analyze marital fertility. Each method serves a specific purpose in refining our understanding of childbearing trends.

99. (C) Improvements in life expectancy for both males and females.
The decline in widowhood rates in India is primarily a result of the overall improvement in public health and the subsequent rise in life expectancy. As mortality rates for both men and women have decreased, the likelihood of a spouse dying during the reproductive years has also fallen. This trend keeps more marriages intact for longer periods, reducing the proportion of the population that is widowed and potentially influencing overall fertility patterns within the country.

100. (A) Both A and R are true and R is the correct explanation of A.
Breastfeeding provides a natural biological form of contraception by delaying the return of a woman's fertility after childbirth. The process of lactation suppresses the release of hormones that trigger ovulation and menstruation, a condition known as postpartum amenorrhoea. This delay increases the time interval between births, which helps to naturally space pregnancies and can lead to a reduction in the total number of children a woman has during her reproductive years.

101. (C) Children Ever Born (CEB)
The Children Ever Born indicator measures the cumulative fertility of a group of women up to the time of a survey or census. It provides an average of all live births experienced by women in specific age groups throughout their lives. This measure is essential for understanding actual reproductive history and is often used to assess completed family size among women who have finished their childbearing years, providing a retrospective view of fertility trends.

102. (B) Fecundity is the ability to conceive, while fertility is the actual birth performance.
In demography, it is vital to distinguish between biological potential and observed outcomes. Fecundity refers to the physical capacity of an individual or a couple to produce children, while fertility refers to the actual number of live births they produce. A person can be highly fecund but have low fertility due to the use of contraception or other behavioral choices. Understanding this distinction is fundamental to analyzing the factors that determine childbearing patterns.

103. (C) The age-specific birth rate patterns are substantially different between cities.
When direct and indirect standardization yield different results, it usually indicates that the populations being compared have very different underlying age patterns of fertility. Direct standardization applies local rates to a standard population, while indirect standardization applies standard rates to a local population structure. If childbearing is concentrated in different age groups in City A compared to City B, these methods may highlight different aspects of the demographic reality, leading to divergent conclusions.

104. (B) It explicitly incorporates the demand for children and costs of fertility regulation.
The Lee and Bulatoo framework is distinguished by its integration of socio-economic and behavioral factors into demographic models. It examines how the demand for children, the potential supply of offspring, and the physical or social costs of controlling fertility influence parental decision-making. This comprehensive approach provides a deeper understanding of why fertility levels change, going beyond purely biological proximate determinants to include the economic and psychological motivations that drive reproductive behavior.

105. (B) The progression towards smaller family sizes in a fertility transition.
Birth order statistics are crucial for tracking the demographic shift toward smaller family sizes. By analyzing the frequency of first, second, and higher-order births, demographers can see if families are limiting their childbearing after a certain number of children. A decline in high-order births is a clear sign that a fertility transition

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122. (B) Children Ever Born (CEB)
Children Ever Born is a cohort indicator that reflects the cumulative reproductive history of a group of women up to the time they were surveyed. Unlike period indicators such as the crude birth rate or total fertility rate, which provide a snapshot of births within a single year, CEB represents the actual lifetime performance of real individuals. This retrospective data is essential for understanding long-term changes in family size across different generations.

123. (B) Age-specific proportions of women who are married.
Coale's Index of Marriage, designated as Im, is calculated using data on the proportion of women who are married in each age group throughout the reproductive years. This index measures the extent to which a population's marriage patterns reduce its fertility from a theoretical maximum. By relating the observed number of marital births to the births that would occur if all women were married, it quantifies the impact of nuptiality on fertility.

124. (C) The Child-Woman ratio from census data.
The Rele Technique is a clever indirect demographic method used to estimate fertility when birth registration data is poor or missing. It utilizes the Child-Woman Ratio, which is easily derived from the age and sex distribution in a census. By establishing a mathematical relationship between this ratio and fertility levels, researchers can estimate birth rates and reproduction rates, providing valuable insights into the demographic trends of a population with limited records.

125. (B) Secondary sterility
Secondary sterility is a condition in which a woman or a couple is unable to conceive or carry a pregnancy to term after having successfully done so at least once in the past. It is distinct from primary sterility, which applies when a conception has never occurred. Monitoring secondary sterility is important for understanding the health factors that may affect reproductive capacity later in life and for assessing the overall fertility potential of a population.

126. (C) P-3, Q-4, R-2, S-1
Matching demographic terms with their descriptions helps to differentiate between marriage and childbearing measures. Nuptiality studies the patterns and formation of unions, while fertility describes actual reproductive performance. The Singulate Mean Age at Marriage specifically estimates the average age at first marriage, and the Crude Birth Rate measures live births relative to the total population. Together, these indicators provide a comprehensive picture of the biological and social drivers of population growth.

127. (C) Long-term population decline and aging.
When fertility rates fall and remain consistently below the replacement level, the population undergoes significant structural changes. Over time, the number of deaths will begin to exceed the number of births, leading to an overall decline in population size. Additionally, the proportion of elderly individuals increases while the youth population shrinks, resulting in an aging society with profound implications for the labor market, social security, and health care services.

128. (B) Quantify inhibiting effects of factors like contraception and marriage patterns.
The Bongaarts model is a quantitative framework designed to measure how specific behavioral and biological factors, known as proximate determinants, lower fertility from its maximum potential level. By identifying key variables such as marriage, contraception, and breastfeeding, the model calculates indices that show the relative impact of each factor on the birth rate. This allows demographers to precisely identify which mechanisms are driving changes in a population's fertility over time.

129. (B) Synthetic cohort
The Singulate Mean Age at Marriage is based on a synthetic cohort approach rather than tracking a real group of individuals. It uses the age-specific proportions of single people observed in a single census to estimate the average age at first marriage. This assumes that a hypothetical group of people will experience these current patterns throughout their entire lives, allowing demographers to derive a useful summary measure of marriage timing from cross-sectional data.

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growth rate stabilizes. This predictable sequence of events describes the historical demographic shift observed in many nations.

146. (D) Both B and C.
The Crude Birth Rate is calculated by dividing the total number of live births by the total mid-year population. Therefore, a decrease in the rate can be caused by either a reduction in the absolute number of births or an increase in the total population size while births remain constant. This mathematical relationship highlights why the rate is described as crude, as it is sensitive to shifts in the overall population count and structure.

147. (C) Total Fertility Rate
To compare the underlying fertility levels of populations with significantly different age structures, the Total Fertility Rate is the most appropriate measure. Unlike the crude birth rate, the TFR is independent of the age and sex composition of a population. By summarizing age-specific fertility rates, it provides a clear picture of reproductive behavior, allowing demographers to make meaningful comparisons between young, rapidly growing populations and older, more stable ones.

148. (C) Fertility
Ansley Coale developed a set of four demographic indices specifically to analyze how marriage patterns and family limitation practices influence overall fertility levels. These indices, which include measures of marital and overall fertility, help researchers quantify the impact of social factors such as the age at marriage and the use of contraception. By using these tools, demographers can better understand the biological and behavioral mechanisms that drive changes in childbearing across different societies.

149. (A) That the marriage patterns observed in a single census will persist for a hypothetical group.
The synthetic cohort approach used in the calculation of the Singulate Mean Age at Marriage assumes that current marriage patterns will remain constant. It treats the age-specific proportions of single people recorded at one point in time as if they represented the lifelong experiences of a hypothetical group of individuals. This allows demographers to estimate the average timing of first marriage without needing long-term historical data, providing a snapshot of current nuptiality trends.

150. (A) P-4, Q-3, R-1, S-2
Matching fertility measures with their representations clarifies their specific demographic functions. The Gross Reproduction Rate measures daughters born without accounting for mortality, while the Net Reproduction Rate includes survival probabilities. The Total Fertility Rate summarizes period age-specific rates for all children. Finally, the General Fertility Rate relates the number of births to the total count of women in their reproductive years. Together, these indicators allow for detailed analysis of childbearing and generational replacement.

151. (A) A decrease in the overall fertility of a population.
An increase in widowhood, particularly during the peak childbearing years, naturally limits a woman's duration of exposure to the risk of conception. In societies where reproduction primarily occurs within marriage, the death of a spouse often brings an end to active childbearing. If remarriage rates are low, this loss of reproductive time results in fewer births per woman, which leads to a reduction in the overall fertility levels of the entire population.

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152. (C) Level of female education.
In demographic frameworks, background or distal factors are socio-economic variables that influence fertility indirectly. Female education is a primary example, as it affects childbearing outcomes by influencing proximate determinants such as the age at marriage, the use of contraception, and desired family size. While biological factors like breastfeeding and age at marriage have a direct impact on fertility, education shapes the social context and personal decisions that ultimately drive these specific behaviors.

153. (B) Age-Specific Marital Fertility Rates
The Total Marital Fertility Rate is a summary measure calculated by aggregating the fertility rates of currently married women across all reproductive age groups. This indicator represents the average number of children a woman would have if she remained married throughout her

represent the final biological stage where social and individual choices can influence the actual number of children born.

138. (A) Controls for the effects of a population's age and sex structure.
The Sex-Age Adjusted Birth Rate is superior to the Crude Birth Rate because it eliminates the confounding influence of demographic composition. By standardizing the calculation to account for the proportion of the population in reproductive age groups and the sex ratio, it provides a clearer measure of underlying fertility behavior. This adjustment allows demographers to make meaningful comparisons between different regions or over time, regardless of their varying age and sex distributions.

139. (B) Constant fertility over time and accurate data.
The P/F ratio is a tool used to check the consistency of fertility reports. It compares cumulative fertility (P) with period fertility (F). In a stable population where childbearing rates have remained constant for many years and the reporting is accurate, these two measures should yield similar results, leading to a ratio close to one point zero. Deviations from this value typically indicate either a change in fertility trends or errors in the data collection.

140. (A) Both A and R are true and R is the correct explanation of A.
India has experienced a consistent decline in fertility over the past few decades, driven by a combination of significant social and economic factors. The increase in female literacy and education, along with rapid urbanization, has fundamentally changed reproductive goals. Furthermore, the improved availability and use of modern family planning methods have empowered individuals to achieve these smaller family sizes. These synergistic effects have accelerated the country's demographic transition toward lower birth rates.

141. (C) Children 0-4 and Women 15-49
The Child-Woman Ratio is typically calculated using census data on the number of children under the age of five and the number of women in the standard reproductive age range. By relating the count of children aged zero to four to the count of women aged fifteen to forty-nine, demographers can derive a rough estimate of recent fertility. This measure is particularly useful in situations where annual birth registration data is incomplete or unavailable.

142. (C) The contribution of specific birth ranks (1st, 2nd, etc.) to the overall fertility rate.
Order-specific fertility measures provide detailed insights into childbearing patterns by analyzing births based on their rank or parity. These measures show the frequency of first, second, and subsequent births within a population. By understanding the contribution of each birth order to the total fertility rate, demographers can determine if families are limiting their size and identify shifts in the timing of entry into motherhood and the spacing between children.

143. (D) It is a cohort measure of fertility.
The Total Fertility Rate is a period measure, not a cohort measure, because it is based on birth rates observed during a single year. While it summarizes age-specific rates and is independent of the age structure, it remains a hypothetical estimate of completed family size for a synthetic cohort. A true cohort measure, such as completed fertility, would require following the same group of women through their entire reproductive lives to record actual births.

144. (C) Nuptiality
Nuptiality is the demographic subfield that focuses on the study of marriage as a social and population-based phenomenon. It examines the frequency of marriage formation, the average ages at which individuals first enter into unions, and the prevalence of marital dissolution through death or divorce. Understanding nuptiality is essential for demographers because the timing and stability of marriages directly influence the duration of exposure to childbearing and overall population growth patterns.

145. (B) 2, 3, 1, 4
A classic demographic transition begins with a decline in mortality rates, which leads to a period of rapid population growth as birth rates remain high. Subsequently, fertility rates begin to decrease as societies adapt to improved child survival and economic development. Finally, both birth and death rates reach a new equilibrium at low levels, and the population

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191. (A) a, b, and c
Nuptiality analysis relies on several key measures and methods to understand marriage timing and prevalence. The singulate mean age at marriage is derived from the proportion of never-married individuals, while its decadal version uses data from two censuses. Additionally, Coale's index Im specifically quantifies the proportion of women who marry. However, an increase in marriage age generally decreases fertility, and the crude marriage rate is indeed sensitive to shifts in the population's age structure.

192. (B) Each generation of daughters is exactly replacing the previous generation.
A Net Reproduction Rate of exactly one point zero is the demographic marker for a stable population in the long term. It signifies that each generation of mothers is producing exactly one daughter who survives to reach her own reproductive age. At this level of generational replacement, the population size will eventually remain constant over time, assuming that mortality and fertility rates stay the same and that there is no significant net migration.

193. (B) Fit a model schedule to observed marital fertility data to detect errors or estimate values.
The Coale-Trussell model is a sophisticated tool used to analyze observed marital fertility data. By fitting mathematical model schedules to birth records, demographers can determine whether the patterns follow natural fertility or if there is significant evidence of family limitation. This method is also valuable for detecting reporting errors and for estimating fertility parameters in situations where registration data might be incomplete, providing a more accurate understanding of childbearing behavior.

194. (C) Post-partum Amenorrhoea
Post-partum amenorrhoea is the biological period after childbirth during which a woman does not experience ovulation or menstruation, making her temporarily infertile. The length of this period is highly variable and is primarily influenced by breastfeeding practices. By naturally increasing the time between a birth and the next possible conception, this condition serves as an important biological constraint on fertility, helping to space pregnancies and influence the overall birth rate in a population.

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195. (D) Completed Family Size
Completed Family Size is a classic cohort indicator that measures the actual number of live births experienced by a group of women who have finished their childbearing years. Unlike period measures like the crude birth rate or total fertility rate, which provide snapshots of fertility within a single year, this indicator offers a retrospective and realistic account of lifetime reproductive performance for a specific generation. It is essential for understanding long-term demographic shifts in family size.

196. (C) Mortality
The primary difference between the Gross Reproduction Rate and the Net Reproduction Rate lies in their treatment of survival probabilities. While the GRR assumes that all newborn daughters will survive until the end of their reproductive lifespan, the NRR incorporates age-specific mortality rates. Therefore, the gap between these two measures directly reflects the impact of mortality on the population, specifically identifying how many potential future mothers will not live long enough to reproduce.

197. (B) An increase in male life expectancy.
Widowhood rates in India have been declining primarily due to the overall increase in life expectancy for men. As public health has improved and the risks of dying at younger ages have decreased, more men are surviving throughout their wives' reproductive years. This trend leads to fewer marital dissolutions by death, keeping more unions intact for longer periods. This reduction in early widowhood can have a significant impact on maintaining higher cumulative fertility within those marriages.

198. (B) Parity-based fertility (a cohort measure)
In the P/F Ratio Technique, the letter P stands for parity-based fertility, which represents cumulative childbearing reported by women in different age groups. This data, often derived from questions about children ever born, reflects the lifetime reproductive history of these cohorts. By comparing this cumulative measure with the period fertility (F) based on recent births, demographers can assess the accuracy of reporting and identify any recent shifts in the population's childbearing trends.

childbearing years and experienced the current marital birth patterns. It isolates fertility behavior within the marital context, making it a valuable tool for comparing reproductive intensity across different societies.

154. (D) Vital registration is incomplete but census or survey lifetime and recent birth data exists.
The Brass P/F ratio method is particularly valuable in developing countries where formal birth registration systems are often unreliable. In these settings, demographers rely on census and survey data concerning the total number of children ever born and births occurring in the past year. By comparing these two types of data, the method allows researchers to detect under-reporting and estimate more accurate fertility levels, providing essential information for population planning.

155. (C) c and e
Nuptiality patterns in India are shifting as society undergoes modernization and social change. Widow remarriage is gradually becoming more common and socially accepted, providing some women with the opportunity for continued family life. Furthermore, there is a strong positive correlation between education and the age at marriage, as educated women often postpone unions to pursue higher studies and careers. These trends reflect broader changes in gender roles and the empowerment of women.

156. (B) Age patterns of marital fertility
The Coale-Trussell model provides demographers with a set of standard schedules that represent typical age patterns of childbearing within marital unions. These schedules allow researchers to analyze whether fertility in a given population is natural or if it shows evidence of deliberate family limitation. By comparing observed data to these models, demographers can estimate the level of contraceptive use and identify deviations from expected biological patterns, helping to refine fertility estimates.

157. (D) Child-Woman Ratio
Nuptiality measures are specifically designed to study marriage formation and dissolution, including the crude marriage rate, the singulate mean age at marriage, and order-specific marriage rates. In contrast, the child-woman ratio is a measure of fertility, not marriage. It relates the number of young children to the number of women of reproductive age to estimate birth levels. While marriage influences fertility, the child-woman ratio itself focuses purely on the childbearing outcomes.

158. (B) The demand for children and the supply of children.
The Lee and Bulatoo framework for fertility analysis is unique because it integrates economic and psychological concepts into demographic modeling. It explicitly examines the demand for children, which is the number of children parents want, and the potential supply of children, which is the number of offspring they could biologically have. By also considering the costs associated with regulating fertility, this framework provides a comprehensive understanding of the motivations behind reproductive decisions.

159. (B) Direct Standardization
Direct standardization is the ideal method for comparing the birth rates of two populations when detailed age-specific fertility rates are available for both. This statistical procedure involves applying the local rates of each population to a common, designated standard age structure. By doing so, demographers can calculate standardized rates that are free from the confounding influence of varying age compositions, allowing for a clear comparison of the underlying fertility behavior of the two groups.

160. (A) Both A and R are true and R is the correct explanation of A.
The Total Fertility Rate is widely considered a more refined demographic indicator than the Crude Birth Rate because it eliminates the influence of population structure. The CBR is heavily affected by the proportion of the population in reproductive ages, making it difficult to compare different groups. In contrast, the TFR is derived from age-specific rates and represents a standardized summary that allows for more accurate comparisons of fertility behavior across different populations and time.

161. (C) Below replacement level fertility
A Total Fertility Rate of one point five indicates that, on average, women are having fewer than two point one children, which is the level required

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130. (B) 1.22
The Gross Reproduction Rate is a measure of female offspring produced per woman. It is calculated by multiplying the Total Fertility Rate by the proportion of female births in the population. Assuming a standard sex ratio at birth of approximately one hundred and five males per one hundred females, the probability of a girl being born is about zero point four eight eight. Multiplying this by a TFR of two point five results in a GRR of roughly one point two two.

131. (B) A population where a large proportion of women never marry.
The gap between the Total Fertility Rate and the Total Marital Fertility Rate is primarily driven by the proportion of women who are outside of marital unions. In a population where many women remain single, the TMFR will be significantly higher because its denominator only includes those who are married and active in childbearing. In contrast, the TFR includes all women, spreading the number of births across a larger base that includes many individuals with zero fertility.

132. (A) a, b, and c
Nuptiality measures vary in their sensitivity and detail. The crude marriage rate is influenced by the overall age structure, while the age-specific marriage rate provides a more precise look at behavior within different age groups. Furthermore, the singulate mean age at marriage uses proportions of single individuals to estimate timing. However, Coale's indices are primarily used to study fertility and the impact of marriage on birth rates, rather than being measures of mortality.

133. (D) Net Reproduction Rate (NRR)
Replacement level fertility is fundamentally defined using the Net Reproduction Rate. An NRR of exactly one point zero signifies that each generation of mothers is producing an equal number of daughters who survive to childbearing age. While a TFR of two point one is often used as a proxy, it is the NRR that truly captures generational replacement by accounting for the essential roles of both fertility and survival in maintaining population size.

134. (B) A shrinking labor force and an aging population.
Prolonged fertility below the replacement level leads to significant socio-economic shifts. As successive generations become smaller, the number of young people entering the workforce declines, while the proportion of elderly people increases. This demographic imbalance strains pension systems and healthcare resources, as fewer workers must support a growing number of dependents. This aging trend can lead to economic stagnation and requires adjustments in government policy and social services.

135. (B) "Survive" the current child population backward to estimate births from which they came.
The Reverse Survival Technique is an indirect demographic method used to reconstruct past birth trends. By taking the number of children in a specific age group from a census and applying estimated survival probabilities, demographers can determine how many births occurred in previous years to produce that number of survivors. This allows for the estimation of birth rates for periods when direct registration was incomplete or absent, providing a historical view of fertility.

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136. (C) The intensity and frequency of breastfeeding.
Postpartum amenorrhoea is the temporary period of infertility that follows childbirth. The duration of this state is most strongly influenced by breastfeeding practices. Frequent and intense suckling stimulates the production of hormones that inhibit ovulation, naturally delaying the return of a woman's fertility. In societies where modern contraception is limited, these breastfeeding patterns play a critical role in determining the spacing between births and overall fertility levels in the population.

137. (B) Fetal mortality from voluntary causes (induced abortion)
In the Davis and Blake framework, gestation variables refer to factors that determine whether a conception results in a live birth. Induced abortion is classified as a voluntary gestation variable because it is a deliberate action taken to terminate a pregnancy. Other variables in this category include involuntary fetal mortality from miscarriage or stillbirth. These factors

as the final pathways through which all other factors must pass to influence the actual number of births.

169. (C) The proportion of the population single in each age group.
Calculating the Singulate Mean Age at Marriage requires census data on the proportion of the population that remains single across successive age groups. By analyzing how the percentage of never-married individuals declines with age, demographers can estimate the average age at which people transition from the single state to the married state. This indirect approach is essential for assessing nuptiality patterns when direct registration of marriage ages is not available or is incomplete.

170. (D) Total Marital Fertility Rate (TMFR)
The Total Marital Fertility Rate is derived by summing the age-specific marital fertility rates across the reproductive lifespan. This measure provides a summary of the childbearing experiences of married women only, representing the average number of children a woman would have if she remained in a union throughout her entire reproductive period. It is a vital tool for isolating fertility behavior within marriage from the broader social patterns that influence the prevalence of marriage itself.

171. (A) a, b, and d
Fertility indicators vary in their refinement and calculation base. The Crude Birth Rate uses the entire population, while the General Fertility Rate focuses on women of reproductive age. Furthermore, the Net Reproduction Rate is distinguished by its incorporation of mortality probabilities, which is essential for measuring replacement. However, the Total Fertility Rate is a period measure using a synthetic cohort, unlike completed fertility, which tracks the actual birth performance of a real generation of women.

172. (A) Primary sterility is lifelong inability to conceive, while secondary occurs after a prior conception.
In demographic and medical terms, sterility describes the physiological inability to reproduce. Primary sterility is used when a woman or couple has never successfully conceived a child throughout their lives. Secondary sterility, in contrast, refers to the inability to conceive or carry a pregnancy to term after having successfully done so at least once in the past. These distinctions are important for understanding reproductive health trends and the factors that influence family size and spacing.

173. (B) The reporting of age, especially for young children, and estimates of mortality.
The Reverse Survival method is an indirect demographic technique that relies heavily on accurate data regarding child populations and survival rates. Errors in the reporting of children's ages, such as age heaping, or inaccurate estimates of infant and child mortality can significantly distort the resulting fertility estimates. Because the method works backward from current survivors to previous births, any mistake in these key inputs will be amplified, potentially leading to incorrect conclusions about past birth rates.

174. (B) It shortens the marital reproductive period where a woman is exposed to the risk of pregnancy.
An increase in the average age at marriage has a direct negative impact on fertility by limiting the number of years a woman spends within a marital union during her peak reproductive period. Since most childbearing occurs within marriage in many societies, delaying the start of the union reduces the total duration of exposure to the risk of conception. This social shift naturally leads to a decrease in the total number of children born to women.

175. (C) Regional differentials in fertility.
The faster decline of fertility in India's southern states compared to the north is a prominent example of regional differentials in demographic behavior. These variations are driven by significant differences in social development, female literacy, and the effective implementation of public health and family planning programs across different parts of the country. Analyzing these sub-national trends is essential for understanding the true complexity of India's demographic transition and for developing targeted regional policies.

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to replace the current generation. This situation is described as below-replacement fertility. In such a population, without significant immigration, the total size will eventually begin to decrease as smaller generations replace larger ones. This trend is common in many developed countries and leads to an aging population structure.

162. (C) The mid-year female population aged 25-29.
To calculate the Age-Specific Fertility Rate for women aged twenty-five to twenty-nine, the number of births to women in that specific age group is divided by the mid-year population of all women in that same age range. This denominator focuses the measure on the group of women who are biologically at risk of giving birth during those years. This detailed approach allows demographers to see how childbearing intensity varies across the different stages of the reproductive lifespan.

163. (D) Ci (index of postpartum infecundability)
In Bongaarts' model of proximate determinants, the index Ci quantifies the fertility-reducing effect of the period of infertility that follows childbirth. This period, known as postpartum amenorrhoea, is primarily extended by the practice of breastfeeding. The Ci index calculates how much the potential birth rate is lowered due to the naturally increased intervals between births caused by lactation. This measure highlights the significant biological role that breastfeeding plays in regulating fertility in many human populations.

164. (A) Cohort measures track a real group over time, while period measures provide a snapshot at one point.
The fundamental distinction between cohort and period measures lies in their temporal perspective. Cohort measures follow a specific group of individuals throughout their lives to record their actual lifetime experiences, such as the total number of children born. Period measures, on the other hand, look at the demographic events occurring within a single year and use a synthetic cohort approach to summarize current conditions. Both are essential for a complete understanding of demographic trends.

165. (A) 1, 2, 3, 4
In many traditional societies, a woman's reproductive life follows a typical chronological sequence of significant social and biological events. This history often begins with entry into marriage, followed by the birth of her first child. Childbearing then continues throughout her reproductive years until the onset of menopause, which marks the biological end of her fertility. Widowhood, though it can occur at any time, most frequently happens at later ages following the conclusion of her reproductive history.

166. (C) Increased adoption and effectiveness of contraceptive methods.
The primary driver of the fertility decline in many developing nations has been the widespread adoption of modern contraceptive methods. Improved access to family planning services has allowed individuals and couples to successfully limit their family size and achieve their desired spacing between children. While social factors like education and urbanization play an important supporting role, the direct biological intervention of effective contraception is the most immediate cause of the reduction in birth rates.

167. (B) That fertility has been falling.
A P/F ratio greater than one for younger women typically signifies a recent decline in fertility levels. This occurs because the cumulative fertility (P), representing births from previous years, is higher than the current period fertility (F) based on recent reports. This inconsistency suggests that the birth rate was higher in the past and has since decreased. Demographers use this ratio to detect such trends and to apply necessary adjustments to ensure accurate estimates of current childbearing patterns.

168. (B) They stand between social/background factors and the actual outcome of fertility.
The intermediate variables in the Davis and Blake framework are so named because they represent the direct biological and behavioral mechanisms that determine childbearing. Socio-economic background factors, such as education or income, do not affect fertility directly; instead, they influence these intermediate variables, which then dictate the outcome. These variables stand in the middle of the causal chain, acting

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population. This allows for the calculation of standardized rates that account for population structure, enabling researchers to make meaningful comparisons even with incomplete or limited local data sources.

184. (D) The number of children born within a marriage.
Nuptiality is the specific demographic subfield concerned with the formation and dissolution of marital unions. It includes the study of marriage frequency, the age at which people marry, and how unions are terminated by death or divorce. However, the actual number of children born within a marriage is a measure of fertility, not nuptiality. While marriage patterns significantly influence birth rates, the count of offspring falls under a different category of demographic study.

185. (A) Both A and R are true and R is the correct explanation of A.
The Total Marital Fertility Rate focuses exclusively on the birth performance of women who are currently in a union, a group that naturally has the highest reproductive activity. In contrast, the Total Fertility Rate considers the entire female population, including those who are single or widowed and likely have zero fertility. Consequently, unless marriage is universal and permanent, the marital rate will consistently exceed the broader general rate due to its more concentrated denominator.

186. (B) Bongaarts' Proximate Determinants Model
While Davis and Blake provided the qualitative framework for intermediate variables, John Bongaarts developed the quantitative model used to measure their impact. His framework allows demographers to calculate specific indices that quantify how much marriage, contraception, and other factors inhibit fertility from its potential maximum. This mathematical approach transformed the study of childbearing by providing a way to precisely explain the differences in birth rates observed between various populations and over different time periods.

187. (B) Are based on data collected at a single point in time or over a short period.
Cross-sectional or period indicators provide a snapshot of demographic events occurring within a specific timeframe, usually a single year. These measures, such as the crude birth rate or the total fertility rate, utilize data from censuses or surveys conducted at one point in time to summarize current conditions. While they are useful for tracking recent trends, they do not follow real individuals over time, unlike cohort indicators that record lifelong reproductive histories.

188. (B) Decrease the completed family size of the affected cohorts.
A sudden rise in widowhood among young women effectively shortens their reproductive lifespan by removing them from marital unions during their peak childbearing years. If these women do not remarry, their exposure to the risk of conception is permanently reduced. This leads to a lower total number of children born over their entire lives, directly resulting in a decreased completed family size for those specific cohorts of women who experienced early marital dissolution.

189. (B) The shift in a population from high levels of fertility to low levels of fertility.
The fertility transition is a major demographic process characterized by a sustained shift from high birth rates to much lower levels. This shift is typically part of a broader societal change involving economic development, improvements in healthcare, and the adoption of modern contraceptive practices. As societies undergo this transition, childbearing patterns move from natural fertility toward controlled fertility, fundamentally altering the age structure and the long-term growth potential of the population.

190. (D) The parity of the mother at the time of birth (i.e. whether it is a 1st, 2nd, 3rd birth etc.).
Order-specific fertility measures analyze childbearing patterns by classifying births according to their numerical rank, also known as parity. This allows demographers to track how many women are having their first, second, or subsequent children within a population. Focusing on birth order is essential for understanding transitions to smaller family sizes, as it highlights changes in the timing of entry into motherhood and the effectiveness of parity-dependent family limitation.

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176. (B) It measures generational replacement by accounting for both fertility and mortality.
The Net Reproduction Rate is the primary demographic indicator used to assess the long-term sustainability of a population. It calculates the average number of daughters a woman will bear if she experiences current fertility and mortality levels. By incorporating survival probabilities, it determines whether each generation of mothers is producing at least one surviving daughter to replace itself. An NRR of one point zero signifies a stable population size in the long run.

177. (B) Child-Woman Ratio and Life Expectancy
The Rele method is a sophisticated indirect technique used to estimate birth rates and reproduction rates from limited demographic data. It establishes a mathematical relationship between the Child-Woman Ratio, which measures recent child survivors, and the overall level of life expectancy in the population. By combining these two measures, demographers can derive accurate estimates of fertility levels, providing a valuable tool for analyzing populations where direct birth registration records are missing or unreliable.

178. (C) The average number of children ever born to women who have finished childbearing years.
Completed family size is a retrospective cohort measure that records the actual reproductive performance of women who have reached the end of their childbearing years, typically age fifty. It provides a definitive count of the average number of live births experienced by a specific generation. This indicator is essential for demographers to understand the long-term changes in fertility behavior and the ultimate effectiveness of social shifts and family planning efforts over time.

179. (C) Total Fertility Rate
The Bongaarts model of proximate determinants is a quantitative framework designed to explain variations in the Total Fertility Rate. It identifies and measures the impact of specific behavioral and biological factors, such as marriage patterns, contraceptive use, and breastfeeding, that inhibit fertility from reaching its theoretical maximum. By calculating indices for each factor, demographers can determine exactly how much each determinant contributes to the observed birth rate, providing a clear understanding of demographic shifts.

180. (A) P-3, Q-2, R-1, S-4
Matching demographic pioneers with their contributions highlights the specialized tools used in the field. Bongaarts is known for the proximate determinants model, while Brass developed the P/F ratio technique for data adjustment. Davis and Blake introduced the framework of intermediate variables, and Hajnal created the Singulate Mean Age at Marriage. These frameworks and methods provide the structural foundation for modern demographic analysis, allowing for the precise measurement and evaluation of marriage and childbearing patterns.

181. (C) Higher than 2.1
Replacement level fertility is the rate required for a generation to replace itself. In populations with high child mortality, many children will not survive to their own reproductive years. Therefore, women must have more than two children on average to ensure that at least two survive to replace the parents. While two point one is standard in developed nations, this value can be much higher in countries where health conditions are poor and mortality is high.

182. (B) An increase in the mean age at marriage for females.
Over the past fifty years, India has seen a steady upward trend in the average age at which women enter into marital unions. This change has been driven by several factors, including increased access to female education, urbanization, and a gradual shift in social norms regarding early marriage. As more women postpone marriage to pursue personal and professional development, the overall timing of the transition to adulthood and family formation has significantly shifted.

183. (C) Age-specific rates for the study population are unknown, but total births are known.
Indirect standardization is the preferred demographic method when detailed information on age-specific birth rates is missing for the population under study. In this situation, demographers use the age-specific fertility rates from a reliable standard population and apply them to the age distribution of the study

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199. (C) Population ageing and an increased old-age dependency ratio.
When a population sustains fertility levels below the replacement level, its age structure fundamentally shifts toward the older generations. The smaller cohorts of children lead to a shrinking youth population and, eventually, a smaller labor force. Meanwhile, the proportion of elderly individuals increases, raising the old-age dependency ratio. This demographic aging places immense pressure on social welfare systems, pension funds, and the healthcare infrastructure, as fewer workers must support more retired citizens.

200. (A) Both A and R are true and R is the correct explanation of A.
The General Fertility Rate is more refined than the Crude Birth Rate because it correctly identifies the population at risk of the demographic event. While the crude rate uses the entire population, the GFR narrows its denominator to women in their reproductive years, typically fifteen to forty-nine. This focus eliminates individuals who cannot biologically give birth, such as men, children, and the elderly, providing a much clearer and more accurate picture of actual fertility behavior.

201. (C) Censuses and demographic surveys
Data regarding the total number of children ever born to women is typically collected through large-scale demographic surveys and national censuses. Respondents are asked to report all live births they have experienced throughout their lives. This cumulative information provides a retrospective view of reproductive history, which is essential for calculating cohort fertility measures and assessing completed family size. These sources are vital when annual birth registration systems are incomplete or unreliable in tracking historical trends.

202. (A) Gestation/parturition
The Davis and Blake framework identifies eleven intermediate variables through which socio-economic factors influence fertility, grouping them into three broad categories. The first includes intercourse variables that affect exposure to sexual unions. The second consists of conception variables that determine the likelihood of pregnancy. The third category, gestation and parturition variables, focuses on the factors that influence whether a conception successfully results in a live birth, such as induced abortion and involuntary fetal mortality.

203. (C) To compare fertility levels between populations with different age structures.
Direct and indirect standardization are statistical techniques used to remove the confounding influence of population composition when comparing demographic rates. Since birth rates are heavily affected by the proportion of women in reproductive ages, comparing two different regions requires an adjustment. By standardizing these rates, demographers can determine what the fertility levels would be if both populations had the same underlying age and sex structure, allowing for a fair and accurate comparison of childbearing behavior.

204. (C) There is likely under-reporting of recent births (F) relative to lifetime births (P).
A P/F ratio consistently around one point two suggests a significant discrepancy between reported cumulative and period fertility. Specifically, it indicates that the number of children ever born (P) is much higher than would be expected based on the reported number of recent births (F). This pattern often points to a data quality issue, such as the systematic under-reporting of births that occurred during the year preceding the survey, rather than a genuine shift in fertility.

205. (C) First births
The Brass P1/F1 Ratio technique is a specialized demographic method focused on evaluating the quality of data specifically related to first-order births. By comparing the cumulative number of women who have ever had a first child with recent reports of first-time mothers, demographers can identify reporting biases or errors in timing. Accurate data on first births is essential for understanding the start of childbearing in a population, which significantly influences the overall pace of demographic change.

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206. (B) It was heavily influenced by organized, state-sponsored family planning programs.
A defining feature of India's fertility transition is the significant role played by government-led family planning initiatives. Unlike the more

average age at which marital dissolution due to death occurs.

269. (C) An effect that could be mixed or negative due to interruptions in exposure to pregnancy risk.
Rising divorce rates can have complex effects on fertility because they introduce periods where women are not currently in a union. These interruptions reduce the total time spent at risk of conception. While remarriage might occur later, the immediate impact is often a reduction in birth rates, making the overall demographic effect of increasing divorce rates mixed or negative.

270. (D) state-level variations reflecting differences in mortality and customs.
Analysis of widowhood in India reveals significant state-level variations that reflect regional differences in health outcomes and social customs. Disparities in male mortality rates and traditional marriage practices across different parts of the country mean that the prevalence and timing of widowhood are not uniform, requiring a localized approach to understanding these demographic patterns and their societal impacts.

271. (C) General Fertility Rate (GFR)
The general fertility rate is a measure that relates the number of births in a population to the total number of women of reproductive age, usually defined as fifteen to forty-nine years. By focusing the denominator on the group actually capable of giving birth, the general fertility rate provides a more accurate reflection of fertility than the crude birth rate.

272. (B) it is independent of the population's age structure.
The total fertility rate is considered a superior summary measure because it is not affected by variations in the age structure of different populations. By summing age-specific fertility rates, it represents the average number of children a woman would have if she experienced current rates throughout her life, allowing for direct comparisons between countries with very different age distributions.

273. (D) The Age-Specific Fertility Rate for the 15-19 age group.
To specifically assess the reproductive contribution of teenagers within a population, the age-specific fertility rate for the fifteen to nineteen age group is the most direct measure. This indicator isolates births occurring to women in that narrow age range, providing clear insights into adolescent fertility patterns without being influenced by the birth rates of older women or overall population totals.

274. (A) It is heavily influenced by the age and sex composition of the population.
The primary drawback of the crude birth rate is its sensitivity to the age and sex distribution of the population. Since the denominator includes everyone—including men, children, and elderly women—a population with many young children or older adults may appear to have low fertility even if reproductive-age women are having many children, making comparisons between populations difficult.

275. (C) By summing the Age-Specific Fertility Rates of a period and scaling the result.
The total fertility rate is conceptually derived by summing the age-specific fertility rates for all women in the reproductive age range for a specific time period. This sum is then multiplied by the width of the age intervals, typically five years, to estimate the total number of children a hypothetical woman would bear if current fertility patterns remained constant.

276. (A) ASMFR uses only currently married women in its denominator.
The age-specific marital fertility rate differs from the standard age-specific fertility rate by restricting its denominator to only those women who are currently married within a specific age group. This measure focuses exclusively on fertility occurring within the context of marriage, which is particularly useful in societies where most childbearing is concentrated within formal marital unions or partnerships.

277. (D) the possibility of female mortality before the end of the reproductive period.
The net reproduction rate is more realistic than the gross reproduction rate because it incorporates the risk of mortality. While both measures count the number of daughters a woman might have, the net reproduction rate accounts for the fact that some girls will die before reaching or completing

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standard population. This process generates an adjusted rate that is independent of Population A's actual age composition, allowing for a fair and accurate comparison with other standardized groups.

214. (B) The average age at first marriage for a synthetic cohort.
The Singulate Mean Age at Marriage is a cross-sectional demographic measure that estimates the average timing of first marriages. It uses the proportions of single people observed in each age group from a single census or survey to create a synthetic cohort. By assuming these current patterns represent the lifelong experiences of individuals, demographers can derive an average age at marriage without needing historical data. This tool is essential for understanding societal shifts in family formation timing.

215. (B) Fertility cannot exceed fecundity.
Fecundity represents the biological potential or the physical capacity of a woman or a couple to produce children, while fertility refers to the actual number of live births achieved. Since fertility is the observed outcome of this biological potential, it is mathematically and physically impossible for the actual number of births to exceed the maximum biological capacity. Social factors, personal choices, and the use of contraception typically keep actual fertility levels well below the biological upper limit of fecundity.

216. (A) Intercourse Variable
In the Davis and Blake framework of fertility determinants, voluntary abstinence within marriage is classified as an intercourse variable. This behavioral factor directly reduces the frequency of sexual relations, thereby decreasing the exposure to the risk of conception. Intercourse variables are the first group of mechanisms that social and economic factors must act upon to influence childbearing outcomes. Other variables in this category include the age at marriage and the duration of time spent outside of marital unions.

217. (A) High male mortality relative to female mortality, especially at older ages.
A high proportion of widows in a population is often a clear indicator of significant gender differences in mortality. This demographic pattern typically occurs when men have lower life expectancies or higher death rates than women, particularly in older age groups. While other social factors like remarriage rates also play a role, the primary driver is the biological and environmental vulnerability of males, which leaves a larger number of surviving females in the widowed marital state.

218. (B) NRR accounts for females who will not survive through reproductive ages.
The Net Reproduction Rate is a more realistic indicator of a population's long-term sustainability than the Gross Reproduction Rate because it incorporates the reality of death. While the GRR assumes that all daughters born will live to complete their own childbearing years, the NRR applies age-specific survival probabilities to these offspring. By accounting for the fact that some future mothers will die before reproducing, the NRR provides an accurate measure of generational replacement levels.

219. (A) a, b, and c
Fertility analysis utilizes various measures to capture different aspects of childbearing. Age-Specific Fertility Rates allow for the study of reproductive patterns by age, while the Total Marital Fertility Rate isolates the experience of married women. Additionally, the Child-Woman ratio provides an indirect estimate of fertility from basic census data. However, the Gross Reproduction Rate is always larger than the Net Reproduction Rate because it ignores mortality, and replacement fertility is defined as an NRR of exactly one point zero.

220. (B) Compare rates between populations with different age structures.
The fundamental goal of age standardization in demography is to allow for meaningful comparisons between diverse populations. Because birth and death rates are heavily influenced by the age composition of a group, crude rates can be misleading if one population is much younger than another. By adjusting these rates to a common standard age structure, researchers can isolate the underlying demographic behavior, ensuring that comparisons reflect actual differences in fertility or mortality rather than simple structural variations.

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gradual, socially driven declines seen in early-industrializing European nations, India's shift to lower birth rates was accelerated by active state policies and public health programs. These efforts focused on providing widespread access to contraception and maternal health services, making the transition faster and more directly influenced by administrative interventions than in the historical experience of developed countries.

207. (B) TMFR is higher than TFR when not everyone is married during reproductive ages.
The Total Marital Fertility Rate only considers women who are currently in a marital union, a group that is actively exposed to the risk of childbearing. In contrast, the Total Fertility Rate includes all women in the population, regardless of their marital status. Since the TFR spreads the number of births across a larger denominator that includes single and widowed women who often have zero fertility, the marital rate will naturally be higher unless marriage is universal.

208. (A) P-3, Q-1, R-4, S-2
Matching nuptiality indicators with their focus highlights the different dimensions of marriage studies. The Crude Marriage Rate provide a basic measure of marriages per thousand people, while the Singulate Mean Age at Marriage estimates the average timing of first unions. Order-specific rates focus on specific events like the first marriage, and divorce rates measure the dissolution of marital unions. Together, these measures provide a comprehensive view of how unions form and end within a population.

209. (C) The monthly probability of conception.
Fecundability is a technical term used in demography to describe the likelihood of a woman conceiving during a single menstrual cycle. It represents the efficiency of the biological reproductive process and is affected by factors such as age, health, and frequency of intercourse. This measure is distinct from the general potential to reproduce, known as fecundity, and the actual number of children produced, which is termed fertility. Fecundability is a key component in modeling the timing of pregnancies.

210. (A) 4, 1, 2, 3
The development of indirect demographic methods has evolved over several decades to address data limitations. The Reverse Survival method was an early conceptualization, followed by William Brass's P/F Ratio Technique in the middle of the twentieth century. Subsequently, the Rele Technique was introduced to estimate fertility from the child-woman ratio, and later, Coale and Trussell developed sophisticated model fertility schedules. Each of these milestones has significantly improved the ability of demographers to analyze childbearing in various settings.

211. (A) Socio-economic status
In the Bongaarts model, proximate determinants are the direct biological and behavioral factors that control fertility, such as marriage, contraception, and breastfeeding. Socio-economic status is not considered a proximate determinant; instead, it is a background or distal variable. Such background factors influence childbearing only indirectly by acting through the specific proximate mechanisms. While social status is important, the Bongaarts model focuses on the final pathways that physically determine the number of live births in a population.

212. (B) Population momentum
India's continued population growth after the fertility decline began is a classic demonstration of population momentum. This occurs because previous periods of high fertility created very large generations of children. As these individuals reached reproductive age, they produced a significant absolute number of births, even though each woman was having fewer children on average. This internal structural pressure keeps the population growing until these large cohorts eventually pass out of their reproductive years and are replaced by smaller ones.

213. (A) Age-specific birth rates of A and the age structure of a standard population.
Calculating a direct standardized birth rate requires applying the specific reproductive behavior of the population being studied to a common demographic structure. Demographers use the age-specific fertility rates of Population A and multiply them by the number of people in each corresponding age group of a chosen

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can determine the degree to which individuals are practicing deliberate family limitation and can estimate key fertility parameters, making it an essential tool for evaluating the progress of a demographic transition.

229. (A) A negative impact, due to time spent outside of a marital union.
An increase in the frequency of divorce typically has a negative effect on the overall fertility of a population. In most societies, childbearing is heavily concentrated within marital unions. When a marriage ends in divorce, the woman's exposure to the risk of conception is usually interrupted or terminated. Unless remarriage occurs quickly, this lost reproductive time leads to fewer births per woman, which contributes to a decline in the total number of children born in the population.

230. (C) P/F Ratio technique
The P/F Ratio technique is a major indirect demographic method used to assess and adjust fertility estimates. It works by comparing the cumulative fertility of women (P), derived from data on children ever born, with the period fertility (F), based on births reported in the past year. By analyzing the consistency between these two measures, demographers can detect errors such as birth omissions and more accurately determine the actual levels of childbearing in the population being studied.

231. (A) specific window; group of people followed over time.
The core difference between period and cohort measures lies in their temporal focus. Period measures provide a snapshot of demographic events occurring within a specific window of time, such as a single year, and often use a synthetic cohort approach for summary statistics. In contrast, cohort measures track the actual experiences of a real group of individuals as they age over several decades. Both perspectives are necessary for a comprehensive analysis of demographic trends and behavioral changes.

232. (A) Grow
A Net Reproduction Rate of one point two indicates that, given current fertility and mortality levels, each generation of mothers is being replaced by a generation of daughters that is twenty percent larger. Because the NRR accounts for the survival of daughters to childbearing age, a value greater than one point zero signifies that the population has the underlying demographic potential to grow over the long term, assuming these rates remain constant and ignoring the effects of migration.

233. (B) Measures fertility without the confounding effect of different proportions married.
The Age-Specific Marital Fertility Rate provides a more refined measure of reproductive behavior than the general age-specific rate by focusing exclusively on married women. By using only those in unions as the denominator, it removes the influence of varying marriage patterns across different populations or over time. This allow demographers to isolate and analyze actual birth spacing and contraceptive efficiency among couples, independent of the societal factors that determine who is married and when unions form.

234. (B) Female literacy and empowerment.
Regional variations in fertility across Indian states are most closely linked to differences in women's social status. States with high levels of female literacy and empowerment, such as those in the south, have consistently reached lower fertility levels much faster than other regions. This is because educated and empowered women often have greater access to information, postponed marriage ages, and more agency in reproductive decision-making, all of which are primary drivers of a successful demographic transition.

235. (A) The biological potential to bear children.
In demographic terminology, fecundity refers to the physiological capacity or biological potential of a woman or a couple to produce offspring. It sets the upper limit for childbearing but is distinct from fertility, which is the actual number of children born. A woman may be highly fecund yet have zero fertility if she chooses to use effective contraception or remains abstinent. Understanding fecundity is essential for identifying the biological constraints on reproduction within a given population.

236. (C) Demographic Transition
The decline of fertility in developed nations was a fundamental part of the broader demographic transition. This historical process involved a shift

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221. (B) A steady increase in the Singulate Mean Age at Marriage.
A significant trend in Indian nuptiality over recent decades has been the consistent rise in the average age at which individuals first marry. This shift is clearly reflected in the increasing value of the Singulate Mean Age at Marriage. Driven by broader social changes such as improved female education, urbanization, and changing cultural norms, this postponement of marriage has directly influenced the timing of childbearing and contributed to the overall decline in fertility levels across the country.

222. (B) The numerical rank of a live birth relative to prior births by that mother.
Birth order refers to the sequential rank of a live-born child among all children ever born to a specific woman. For example, a first child has a birth order of one, while a third child has a birth order of three. Analyzing births by their order is essential for demographers to understand family building patterns and to identify whether a population is moving toward smaller family sizes by reducing the frequency of high-parity births.

223. (A) Fertility is likely to increase due to shorter birth intervals.
Breastfeeding has a natural contraceptive effect by extending the period of postpartum amenorrhoea, which delays the return of ovulation after childbirth. If a population shifts from long-duration breastfeeding to early weaning and the use of bottle-feeding, this biological protection is lost. Without the compensatory use of modern contraception, women will return to a fecund state much sooner after each birth. This leads to shorter intervals between pregnancies and a likely increase in overall fertility levels.

224. (B) It specifically refers to the decline of fertility from high to low levels.
The fertility transition is a distinct demographic process that describes the historical shift within a population from high birth rates toward much lower, controlled levels of childbearing. This transition is usually driven by social and economic development, improvements in child survival, and the widespread adoption of family planning. While often linked with a corresponding decline in mortality, the term specifically focuses on the fundamental changes in reproductive behavior and family size over time.

225. (B) Both A and R are true but R is not the correct explanation of A.
The Child-Woman Ratio is a rough yet valuable demographic measure, primarily because it can be easily calculated from basic census data when annual birth records are missing. However, its accuracy is significantly compromised by several factors. These include the frequent misreporting of children's ages, the potential under-enumeration of young children in surveys, and the influence of infant mortality. While these issues explain its limitations, they are not the reason why the measure is considered useful in the first place.

226. (B) Total Fertility Rate
The Total Fertility Rate is calculated by aggregating the age-specific fertility rates for each year of the reproductive lifespan. When using five-year age intervals, the sum of these rates is multiplied by five to represent the total number of children a hypothetical woman would have. This measure is a summary period indicator that eliminates the confounding effect of age structure, providing a standardized value that represents the current intensity of childbearing in a population.

227. (A) The current age structure of the widowed population.
When derived from cross-sectional census data, the mean age of widowhood reflects the average age of all individuals who are currently in the widowed marital state. This measure provides a snapshot of the demographic composition of the widowed population at one point in time. It is influenced by the historical timing of marriages, past mortality trends for spouses, and the age-specific rates of remarriage, rather than indicating the exact age at which widowhood typically occurs.

228. (A) The observed age-specific marital fertility rates of a population.
The primary input for the Coale-Trussell model is a set of observed age-specific marital fertility rates for the population being analyzed. This model uses these rates to compare the observed behavior against a standard schedule of natural fertility. By doing so, demographers

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or administrative records of marriage ages were unavailable, providing a standard tool for global comparative nuptiality studies.

244. (C) Crude Birth Rate
The Crude Birth Rate is the most basic measure of fertility and can be calculated using only two pieces of information: the total number of live births recorded during a year and the total mid-year population. By dividing the count of births by the population and multiplying by one thousand, demographers can derive a general overview of birth frequency. While it is sensitive to the population's age and sex structure, its simplicity makes it a widely used starting point.

245. (A) A decrease in the median age of the population.
Sustained fertility below the replacement level leads to an aging population structure, which increases the median age rather than decreasing it. As fewer children are born each year, the base of the population pyramid narrows, and the proportion of elderly individuals naturally grows. This demographic shift places a strain on social security and healthcare systems and results in a long-term decline in total population size. These trends are characteristic of many advanced societies facing below-replacement birth rates.

246. (B) It provides a qualitative classification of variables affecting fertility.
The Davis and Blake framework is a seminal contribution to demography that identifies and classifies the direct biological and behavioral factors influencing fertility. It provides a qualitative model by grouping eleven intermediate variables into three categories: intercourse, conception, and gestation. This framework explains how socio-economic factors must act through these specific mechanisms to produce childbearing outcomes. While it does not provide quantitative measurements like later models, it established the logical foundation for all modern fertility analysis.

247. (B) Total Fertility Rate and Singulate Mean Age at Marriage
The synthetic cohort assumption is a fundamental tool in demography used to summarize period-specific rates. Both the Total Fertility Rate and the Singulate Mean Age at Marriage utilize this approach. They treat the age-specific birth and marriage rates observed during a single point in time as if they were the lifelong experiences of a hypothetical group of individuals. This allows demographers to derive useful summary measures that reflect current social and biological conditions without needing to track real cohorts over many years.

248. (A) The GRR only counts female births.
The primary difference between the Total Fertility Rate and the Gross Reproduction Rate is that the TFR includes all children born, regardless of their sex. In contrast, the GRR focuses exclusively on female offspring, representing the average number of daughters a woman will bear. Because both are period measures using a synthetic cohort approach and ignoring mortality, the TFR is essentially the GRR plus the corresponding rate for male births, making it the more comprehensive measure of total childbearing.

249. (B) It could increase the completed fertility of women widowed young.
Widowhood effectively terminates a woman's exposure to the risk of conception within a marital union. If a woman is widowed during her peak reproductive years, her total number of potential births is reduced. However, if she is able to remarry, her exposure to the risk of pregnancy is resumed. Therefore, a trend toward increased widow remarriage allows these women to continue childbearing, which can lead to a higher completed family size compared to those who remain widowed.

250. (A) A diverse and ongoing process with significant variation between states.
The fertility transition in India is a complex and uneven demographic shift that reflects the country's vast regional disparities. While several states, particularly in the south, have successfully reached below-replacement fertility levels, many others in the north still experience relatively high birth rates. This ongoing process is influenced by varying levels of socio-economic development, female education, and healthcare access. Understanding these localized trends is essential for a complete and accurate picture of India's evolving demographic landscape.

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251. (B) Crude Marriage Rate (CMR)
The crude marriage rate is a basic measure calculated by dividing the total number of marriages by the mid-year population. Because it includes the entire population in the denominator—including children and elderly individuals who are not eligible for marriage—its value is highly sensitive to the proportions of people in different age groups within the population.

252. (A) It can be calculated using census data on marital status, bypassing the need for complete marriage registration.
The singulate mean age at marriage serves as a vital demographic tool because it utilizes readily available census data regarding marital status by age. This methodology allows researchers to estimate the average age at first marriage even in developing regions where vital registration systems for marriages are incomplete or unreliable, providing a synthetic cohort view of marriage patterns.

253. (C) Age-Specific Marriage Rate (ASMR)
To compare the frequency and timing of marriage for a particular age group, such as individuals aged twenty to twenty-four, age-specific marriage rates are the most suitable metric. Unlike crude rates, this measure isolates specific cohorts, allowing demographers to observe how marriage behavior differs across distinct age intervals and between different populations without the distortion of overall population structure.

254. (D) Its significant influence on fertility outcomes.
Nuptiality patterns are a primary focus in demographic studies due to their direct and powerful impact on fertility levels. Marriage often marks the beginning of regular exposure to the risk of pregnancy in many societies. Therefore, understanding the timing, prevalence, and duration of unions is essential for predicting birth rates and overall population growth dynamics over the long term.

255. (C) The sequence of marriages, such as first or subsequent unions.
The order-specific marriage rate is a specialized demographic measure designed to analyze the sequence of marriage events within a population. It differentiates between first-time marriages and higher-order unions, such as second or third marriages. This distinction helps researchers understand the prevalence of remarriage and the complexity of union formation beyond the initial entry into a marital state.

256. (B) It creates a hypothetical cohort's experience from cross-sectional data of a single period.
The singulate mean age at marriage is categorized as a synthetic cohort measure because it uses cross-sectional data from a single census to estimate the lifetime marriage experience of a hypothetical group. By assuming that a cohort will experience current age-specific marriage probabilities throughout their lives, it constructs a summary measure of marriage timing from snapshot data.

257. (D) The proportions of single individuals in successive age groups from a census.
The standard calculation for the singulate mean age at marriage requires data on the proportions of the population that remain single or never married within successive age groups. This information is typically sourced from national censuses. By analyzing the decline in the single population across these age intervals, demographers can mathematically infer the average age at first marriage.

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258. (A) It utilizes data from two consecutive censuses to observe changes over time.
While the standard singulate mean age at marriage relies on a single census, the decadal synthetic cohort method incorporates data from two censuses conducted ten years apart. This approach allows researchers to observe the actual changes in marital status for specific age cohorts as they age over the decade, leading to more robust and accurate estimates of marriage timing.

259. (C) The average number of years a person remains single before their first marriage.
Conceptually, the singulate mean age at marriage represents the average duration an individual spends in the single or never-married state before entering their first union. It is derived by calculating the total years lived as single by a hypothetical cohort of people up to a certain age, usually fifty, providing a standardized measure of the timing of marriage.

260. (A) To provide standardized measures of marriage prevalence.
Coale's indices of nuptiality are designed to offer standardized tools for measuring the prevalence and intensity of marriage within different populations. These indices allow demographers to compare marriage patterns across various cultural and geographic contexts by relating observed fertility or marriage levels to a maximum potential, thereby providing a more nuanced understanding of how marriage influences overall reproduction.

261. (D) It shows a general upward trend, but with notable variations among different groups.
Over the past several decades, the age at marriage in India has demonstrated a consistent upward trend. However, this change is not uniform throughout the country. Significant differences remain based on geographical location, such as different states, as well as socio-economic factors like education, income levels, and the distinction between rural and urban residency patterns across the population.

262. (B) the variations in marriage patterns across different population subgroups.
In demographic analysis, the term differentials refers to the significant variations observed in population characteristics or behaviors across different subgroups. This includes differences in marriage timing or prevalence when comparing populations by residence, such as rural versus urban areas, or by socio-economic status, caste, and regional location, highlighting the diversity within a larger national or global population.

263. (C) The age gap between spouses and higher male mortality at older ages.
The high prevalence of widowhood in India is primarily driven by two factors: the traditional age gap between husbands and wives and the higher mortality rates experienced by males at older ages. Because women are often younger than their spouses and live longer on average, they face a significantly higher probability of experiencing the death of their partner.

264. (D) Divorce rates have been historically low but are showing a gradual increase.
Historically, divorce rates in India have remained relatively low compared to those in Western nations. However, recent trends indicate a gradual increase in the frequency of marital dissolution through divorce, particularly in urban centers. This shift reflects changing social norms, greater economic independence for some women, and evolving legal frameworks regarding the termination of marriage within the country.

265. (A) Variations based on region, caste, and age at widowhood.
The likelihood of a widow remarrying in India is influenced by a complex interplay of social and personal factors. These include regional customs, caste-based norms, and the age at which the woman became a widow. Younger widows may have higher prospects for remarriage compared to older women, though traditional cultural restrictions often limit these opportunities across various social strata.

266. (B) To analyze their effect on the reproductive lifespan and fertility.
Demographers study marital dissolution through widowhood and divorce because these events directly impact the reproductive lifespan of women. By ending or interrupting unions, these phenomena change the duration of exposure to the risk of conception. Understanding these trends is essential for accurately modeling fertility patterns and their subsequent influence on the overall growth and structure of a population.

267. (B) An increase in a woman's total time exposed to the risk of pregnancy.
When mortality rates decline and fewer women experience widowhood at younger ages, the average duration of marital unions tends to increase. This leads to a longer period during which women are continuously exposed to the risk of pregnancy throughout their reproductive years. Such a shift can potentially result in higher overall fertility levels if other factors remain constant.

268. (A) Data on marital status from the Census.
The calculation of the mean age of widowhood often relies on comprehensive data regarding the marital status of the population. National census records provide the necessary information on the proportions of individuals who are widowed across various age groups. By analyzing this cross-sectional data, researchers can estimate the

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from a traditional regime of high birth and death rates to a modern regime of low birth and death rates. As countries industrialized and improved public health, mortality fell first, followed by a subsequent decline in fertility as societal norms and reproductive goals changed. This transition fundamentally altered the age structure and growth patterns of modern populations.

237. (B) To create a birth rate free from sex-age structure influence for comparability.
The Sex-Age Adjusted Birth Rate is a sophisticated demographic measure designed to allow for more accurate comparisons of fertility between different populations. By standardizing the calculation to account for variations in both the sex ratio and the age distribution, it eliminates the confounding effects of population structure. This adjustment isolates the actual reproductive behavior of the group, providing a clearer and more comparable indicator than the crude birth rate, which is heavily influenced by demographic composition.

238. (A) Large
The gap between the Gross Reproduction Rate and the Net Reproduction Rate is a direct reflection of the impact of mortality on newborn females. In a population where many women die before completing their reproductive years, the NRR will be significantly lower than the GRR. This large difference indicates that although fertility levels may be high, a substantial number of potential future mothers are not surviving to reproduce, which has profound implications for the population's long-term replacement and growth.

239. (B) Cohort data (cumulative fertility of real cohorts)
Data regarding the number of children ever born, often collected in censuses, provides a cumulative record of the reproductive history of real groups of women. This information is considered cohort data because it summarizes the total lifetime birth performance of individuals up to the point of the survey. Unlike period data, which focuses on events in a single year, this retrospective information allows demographers to analyze the actual reproductive experiences of different generations and track shifts in family size.

240. (A) P-3, Q-1, R-2, S-4
Matching demographic concepts with their corresponding measures clarifies the different layers of population analysis. The Total Fertility Rate is a standard period measure, while Completed Family Size reflects the actual lifetime experience of a cohort. Nuptiality is often summarized by the Singulate Mean Age at Marriage. Finally, contraceptive prevalence is a key proximate determinant that directly influences birth rates. Together, these indicators allow demographers to study the biological, behavioral, and social factors that drive population dynamics.

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241. (B) Estimates of child mortality.
The Reverse Survival method is an indirect technique that works backward from the number of children in a current census to estimate the original number of births. To be accurate, this method requires highly reliable estimates of the probability of surviving from birth to the age of the children being counted. If mortality estimates are incorrect, the resulting birth rates will be significantly biased, making accurate data on infant and child deaths the most critical challenge for this method.

242. (B) The length of the interval between births.
Post-partum amenorrhoea is the period of temporary infertility following a birth, during which ovulation does not occur. By naturally extending the time before a woman can conceive again, this biological state directly influences the spacing between consecutive children. The longer this period lasts, the greater the interval between births, which reduces the total number of children a woman can have during her reproductive years. This natural mechanism is most strongly influenced by the practice and duration of breastfeeding.

243. (A) John Hajnal
The Singulate Mean Age at Marriage was developed by the demographer John Hajnal in the middle of the twentieth century. He introduced this indirect method to estimate the average timing of first marriage using cross-sectional data on marital status from a single census. His contribution was revolutionary because it allowed researchers to study marriage patterns in populations where detailed historical

their own reproductive years, providing a better estimate of generational replacement.

278. (B) the fertility level is just sufficient for the female population to replace itself.
A net reproduction rate of exactly one point zero represents replacement-level fertility. At this level, each generation of mothers produces exactly one daughter who survives to reproductive age to replace her. This value serves as a critical benchmark for long-term population stability, as a sustained rate of one point zero indicates that the population will eventually stop growing.

279. (C) Total Marital Fertility Rate (TMFR)
The total marital fertility rate is the appropriate indicator for estimating the number of children a woman would have if she remained married throughout her entire reproductive life and experienced current age-specific marital fertility rates. This hypothetical measure removes the impact of marriage timing and dissolution, focusing solely on the fertility behavior of women within marital unions.

280. (D) Female births (daughters) per woman.
The gross reproduction rate specifically calculates the average number of daughters a woman would bear if she survived through her reproductive years and experienced the current age-specific fertility rates. Unlike the total fertility rate, which counts all births, the gross reproduction rate focuses only on female offspring, as they are the ones who will continue the reproductive process.

281. (A) Period indicators provide a cross-sectional snapshot, while cohort indicators offer a longitudinal history.
Period fertility indicators capture reproductive behavior during a specific time interval, offering a cross-sectional snapshot of current conditions. In contrast, cohort indicators like children ever born provide a longitudinal history by tracking the cumulative reproductive experience of a group of individuals over their lifetime. This distinction allows demographers to analyze both immediate trends and long-term reproductive changes.

282. (B) Women who have finished their reproductive years (e.g., aged 45-49).
Completed family size refers to the total number of children ever born to a specific group of women who have reached the end of their reproductive lifespan, typically defined as those aged forty-five to forty-nine. This measure reflects the final parity of a cohort and is a key indicator for understanding historical fertility levels and realized reproductive intentions over time.

283. (B) To enable meaningful comparison of birth rates between populations with different age structures.
Age standardization techniques are used to eliminate the distorting effects of different age distributions when comparing fertility across populations. By applying a common age structure, these methods allow demographers to determine whether differences in birth rates are due to actual reproductive behavior or simply because one population has a higher proportion of women in peak childbearing ages.

284. (A) When the age-specific birth rates of the study population are not available.
A researcher would utilize the indirect method of standardization when reliable age-specific birth rates for the population under study are unavailable or problematic. Instead of using local rates, this method applies a set of standard age-specific rates to the local age structure to calculate expected births, which are then compared to the actual total number of observed births.

285. (C) accounts for the specific sex and age composition of a population.
The sex-age adjusted birth rate is considered a refined measure because it systematically accounts for the specific composition of a population in terms of both sex and age. By adjusting for these demographic factors, it provides a more accurate and comparable indicator of fertility that is less susceptible to the biases inherent in simpler measures like the crude birth rate.

286. (D) The practice of breastfeeding is a primary determinant of the length of PPA.
Breastfeeding is a crucial biological determinant of the duration of postpartum amenorrhoea, the period of temporary infertility after childbirth.

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16. What is the primary focus of the Mosley and Chen's Framework for Child Survival?
(A) To categorize the causes of infant death into endogenous and exogenous types.
(B) To link socio-economic determinants with proximate determinants of child health.
(C) To provide a robust method for the indirect estimation of childhood mortality.
(D) To model the chronological stages of epidemiological transition in developing countries.

17. According to the Mosley and Chen Framework, which of the following would be considered a 'proximate determinant' of child survival?
(A) Paternal education level
(B) Maternal nutritional status
(C) Household income
(D) Cultural norms about child-rearing

18. Match the items in List I with those in List II and select the correct option.
List I: (Mortality Indicator)
P. Crude Death Rate
Q. Age-Specific Death Rate
R. Infant Mortality Rate
S. Maternal Mortality Rate
List II: (Typical Denominator)
1. Mid-year population of a specific age group
2. Total live births in a year
3. Total mid-year population
4. Total live births in a year (per 100,000)
(A) P-3, Q-1, R-2, S-4
(B) P-1, Q-3, R-4, S-2
(C) P-3, Q-2, R-1, S-4
(D) P-2, Q-1, R-3, S-4

19. Read the following statements and select the correct option.
Statement I: The quality of mortality data is generally better in developed regions compared to developing regions.
Statement II: Developing regions often rely on indirect methods of mortality estimation due to incomplete vital registration systems.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

20. Which of the following is an incorrect statement regarding the merits and demerits of mortality measures?
(A) CDR is easy to compute but is influenced by the population's age structure.
(B) ASDRs provide a detailed picture of mortality but are data-intensive to calculate.
(C) IMR is a sensitive indicator of socio-economic development.
(D) MMR is a robust measure that is not affected by under-reporting of births or deaths.

21. Consider the following factors related to mortality decline:
1. Improvements in public health and sanitation
2. Advances in medical technology and antibiotics
3. Increased female literacy and education
4. Better nutrition and food supply
Which of these factors are generally responsible for mortality decline in developing countries?
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2, and 4 only
(D) 1, 2, 3, and 4

22. The indirect method of estimation of Infant and Child mortality rates is particularly useful when:
(A) Census data is unavailable.
(B) Direct data from vital registration systems is incomplete or unreliable.
(C) The population has a very old age structure.
(D) Researchers want to study cause-specific mortality.

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23. A demographer is comparing the mortality of two cities. City A has a much younger population than City B. To provide a fair comparison of their underlying mortality conditions, which technique would be most appropriate?
(A) Calculating the Crude Death Rate for both cities.
(B) Using the Case-fatality ratio for major diseases.
(C) Comparing the total number of deaths in each city.
(D) Direct or Indirect standardization of mortality rates.

295. (C) direct data from vital registration systems is deficient or unreliable.
Indirect estimation techniques like the P/F ratio are primarily employed when direct sources of demographic data, such as national birth registration systems, are incomplete, deficient, or considered unreliable. These methods allow researchers to use alternative data sources, such as census information on children ever born, to reconstruct more accurate estimates of current fertility levels within a population.

296. (D) A historical shift from high to low levels of fertility.
The fertility transition is defined by a significant historical shift within a population from high levels of fertility and mortality to low levels. This process is a key component of the broader demographic transition and typically involves a decline in family size as societies modernize, leading to improved survival rates and changes in reproductive behavior and social norms.

297. (A) uneven, with significant variations across different states and groups.
The fertility transition currently taking place in India is characterized by its lack of uniformity. While some states have already reached or fallen below replacement-level fertility, others maintain relatively high rates. This uneven progress reflects diverse regional socio-economic conditions, varying levels of female education, and differences in the effectiveness of health and family planning programs across the country.

298. (B) The level of fertility (TFR of about 2.1) required for a population to replace itself generationally.
Replacement-level fertility is the specific level of fertility at which a population exactly replaces itself from one generation to the next, without migration. This is typically represented by a total fertility rate of approximately two point one children per woman. The extra zero point one accounts for the fact that some children will not survive to reach their reproductive years.

299. (B) Population aging and potential long-term population decline.
Sustained fertility below the replacement level leads to significant demographic shifts, most notably population aging and eventual population decline. As fewer children are born, the proportion of elderly individuals in the population increases. This change creates long-term challenges for the economy, labor supply, and the sustainability of social security and healthcare systems as the support ratio shifts.

300. (A) Because it has significant consequences for social security, healthcare, and labor markets.
Studying below-replacement fertility is essential for policymakers because very low birth rates have profound long-term impacts on a nation's infrastructure. The resulting aging population places increased pressure on healthcare services and social security systems while simultaneously shrinking the labor force. Understanding these dynamics allows governments to plan for the economic and social adjustments necessary to maintain societal stability.

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Statement II: Health is defined merely as the absence of disease or infirmity.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

32. Which statement regarding sources of morbidity data is incorrect?
(A) Hospital records can be a valuable source of morbidity data.
(B) Vital registration systems are the primary source for morbidity data.
(C) Population-based health surveys are often used to collect information on self-reported illness.
(D) Disease surveillance systems track the occurrence of specific infectious diseases.

33. Consider the following indicators:
1. Incidence rate
2. Prevalence rate
3. Case-fatality ratio
4. Crude Death Rate

Which of the above are specifically considered measures of morbidity?
(A) 1 and 2 only
(B) 1, 2, and 3 only
(C) 3 and 4 only
(D) 1, 2, 3, and 4

34. A public health report states that there are 500 existing cases of tuberculosis in a city of 100,000 people on January 1st. This figure of 500 represents:
(A) The prevalence of tuberculosis.
(B) The incidence of tuberculosis.
(C) The case-fatality ratio of tuberculosis.
(D) The crude morbidity rate.

35. The 'incidence rate' of a disease measures:
(A) The total number of existing cases at a specific point in time.
(B) The proportion of deaths among those who have the disease.
(C) The rate at which new cases of a disease occur in a population during a specified period.
(D) The overall burden of the disease on the healthcare system.

36. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): The epidemiological transition describes the shift in disease patterns from infectious diseases to chronic, non-communicable diseases.
Reason (R): This shift is typically associated with modernization, aging populations, and developments in public health and medicine.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

37. Which of the following best describes the 'case-fatality ratio'?
(A) The total number of new clinical cases of a specific disease identified in a year.
(B) The total number of people diagnosed with a disease living at a given point in time.
(C) The proportion of individuals with a particular disease who die from that disease within a specified time.
(D) The rate of death resulting from a specific disease within the total mid-year population.

38. All of the following are elements of the rationale for focusing on Reproductive Health EXCEPT:
(A) It is a state of complete physical, mental and social well-being in all matters relating to the reproductive system.
(B) It focuses solely on the prevention of sexually transmitted infections.
(C) Poor reproductive health disproportionately affects women in developing countries.
(D) It is integral to overall health and development.

39. Consider the following components of health care:
1. Antenatal care
2. Safe delivery services
3. Post-natal care
4. Blood transfusion services
5. Surgical capabilities (e.g., Caesarean section)

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younger age structure. If both populations have the same Age-Specific Death Rates (ASDRs), which population is likely to have a higher Crude Death Rate (CDR)?
(A) Population A
(B) Population B
(C) The CDR will be identical for both.
(D) It is impossible to determine without knowing the birth rates.

9. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): The study of mortality is crucial for public policy and interventions.
Reason (R): Mortality indicators like IMR and MMR reflect the overall health status and socio-economic development of a country.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

10. Which of the following is the most appropriate formula for calculating the Infant Mortality Rate (IMR)?
(A) (Number of deaths of infants under 1 year / Total number of live births in the same year) x 1000
(B) (Number of deaths of children under 5 years / Total mid-year population in the same year) x 1000
(C) (Number of maternal deaths occurring in a year / Total number of live births in the same year) x 100,000
(D) (Number of deaths from all causes in a year / Total mid-year population in the same year) x 1000

11. Which of the following is NOT typically classified as a primary mortality indicator?
(A) Under-five mortality Rate
(B) Age Specific Death Rate (ASDR)
(C) Maternal Mortality Rate (MMR)
(D) Cause-Specific Death Rate (CSDR)

12. Consider the following mortality indicators:
1. Crude Death Rate (CDR)
2. Age Specific Death Rate (ASDR)
3. Infant Mortality Rate (IMR)
4. Under-five mortality Rate
5. Maternal Mortality Rate (MMR)

Which of the given indicators use 'total number of live births in the same year' as the denominator in their calculation?
(A) 1 and 2 only
(B) 3, 4 and 5 only
(C) 3 and 5 only
(D) 1, 2, 3, 4, and 5

13. The Maternal Mortality Rate (MMR) is conventionally expressed per:
(A) 1,000 live births
(B) 100,000 population
(C) 100,000 live births
(D) 1,000 population

14. Which statement correctly distinguishes between Endogenous and Exogenous causes of infant mortality?
(A) Endogenous causes are related to the external environment, while exogenous causes are related to genetic factors.
(B) Endogenous causes primarily affect infants after the neo-natal period, while exogenous causes are dominant in the first week of life.
(C) Endogenous causes are preventable through vaccination, while exogenous causes require better obstetric care.
(D) Endogenous causes are linked to the conditions of pregnancy and birth, while exogenous causes stem from the post-birth environment.

15. Arrange the following periods of early life mortality in chronological order, starting from the earliest.
1. Post-natal period
2. Late neo-natal period
3. Perinatal period
4. Early neo-natal period

Choose the correct sequence from the following:
(A) 3, 4, 2, 1
(B) 4, 2, 1, 3
(C) 1, 2, 4, 3
(D) 2, 4, 3, 1

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CHAPTER 05
Mortality, Morbidity and Health

1. Which of the following best defines 'pregnancy wastage' as per the demographic concept?
(A) The death of a live-born infant before their first birthday.
(B) The termination of pregnancy before the fetus is viable.
(C) The inability of a woman to conceive after one year of trying.
(D) The sum of all maternal deaths during childbirth.

2. The period for an early neo-natal death is defined as the death of a live-born infant within how many days of life?
(A) The first 7 days
(B) The first 28 days
(C) The first 12 months
(D) The first 24 hours

3. Match the items in List I with those in List II and select the correct option.
List I: (Mortality Term)
P. Still birth
Q. Late neo-natal death
R. Post neo-natal death
S. Infant death
List II: (Definition)
1. Death of a live born infant after 28 days but before completing one year.
2. Death of a fetus after 28 weeks of gestation.
3. Death of a live born infant before completing one year of age.
4. Death of a live born infant between 7 to 28 days of life.
(A) P-2, Q-4, R-1, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-2, Q-1, R-4, S-3
(D) P-3, Q-4, R-2, S-1

4. Read the following statements and select the correct option.
Statement I: Miscarriage is a spontaneous or unplanned expulsion of a fetus from the womb before it is able to survive independently.
Statement II: Abortion is a procedurally induced termination of a pregnancy.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

5. Which of the following statements about mortality concepts is incorrect?
(A) A still birth is also referred to as a fetal death.
(B) Child death typically refers to the death of a child between the age of one and five years.
(C) A live birth is defined as the birth of a child who survives for at least 24 hours.
(D) Neo-natal death encompasses both early and late neo-natal deaths.

6. Consider the following terms related to mortality:
1. Miscarriage
2. Fetal death
3. Still birth
4. Live birth
Which of the above are considered forms of pregnancy wastage?
(A) 1 and 4 only
(B) 1, 2, and 3 only
(C) 2, 3, and 4 only
(D) 1, 2, 3, and 4

7. The Crude Death Rate (CDR) is considered 'crude' primarily because:
(A) It is difficult to calculate with precision.
(B) It only includes deaths from specific causes.
(C) It is an outdated measure no longer used in demography.
(D) It does not account for the age and sex structure of the population.

8. A researcher is studying mortality in two populations. Population A has a large proportion of elderly people, while Population B has a

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24. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): Age-sex specific mortality rates in India show significant differentials.
Reason (R): Mortality patterns in India are influenced by place of residence and socio-economic characteristics.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

25. What is the primary purpose of direct standardization of mortality rates?
(A) To calculate the infant mortality rate when live birth data is missing.
(B) To estimate the life expectancy of a population.
(C) To compare mortality rates between two or more populations by removing the effect of differences in their age structures.
(D) To determine the leading causes of death in a population.

26. Which of the following is NOT an underlying assumption for the construction of a life table based on ASDRs of a community?
(A) The population size remains constant from year to year.
(B) The cohort is closed to migration.
(C) The mortality experience of the cohort is fixed over time.
(D) Deaths are evenly distributed throughout the year.

27. Consider the following statements regarding mortality trends:
1. Historically, developing countries had higher mortality rates than developed countries.
2. Mortality decline in developing countries has often been faster than the historical decline in developed countries.
3. Age-specific mortality curves typically show a 'U' or 'J' shape.
4. In India, there are no significant mortality differentials by place of residence (urban/rural).
5. Socio-economic characteristics have a negligible impact on mortality rates.

Which of the above statements are correct?
(A) 1, 2 and 3 only
(B) 3, 4 and 5 only
(C) 1 and 4 only
(D) 2, 4 and 5 only

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28. In a life table, what does the value 'lx' represent?
(A) The number of deaths between age x and x+n.
(B) The number of survivors at the exact age x.
(C) The probability of dying between age x and x+n.
(D) The total number of person-years lived between age x and x+n.

29. The concept of a 'Model Life Table' is needed primarily when:
(A) A country has highly accurate and complete age-specific death data.
(B) Researchers want to compare mortality between two developed nations.
(C) Empirical data on age-specific death rates for a population is defective or non-existent.
(D) The goal is to calculate the Crude Death Rate of a population.

30. Match the items in List I with those in List II and select the correct option.
List I: (Life Table Notation)
P. nqx
Q. Lx
R. ex
S. dx
List II: (Description)
1. Number of deaths in the interval (x, x+n)
2. Probability of dying between age x and x+n
3. Person-years lived in the interval (x, x+n)
4. Expectation of life at age x
(A) P-1, Q-3, R-2, S-4
(B) P-2, Q-3, R-4, S-1
(C) P-2, Q-4, R-3, S-1
(D) P-3, Q-1, R-4, S-2

31. Read the following statements and select the correct option.
Statement I: Morbidity refers to the state of being diseased or unhealthy within a population.

Frequent and intense breastfeeding stimulates hormonal responses that naturally suppress ovulation. Consequently, populations with longer average durations of breastfeeding typically experience longer periods of postpartum infecundability, which acts as a natural mechanism for spacing births and limiting overall fertility.

287. (C) Factors affecting exposure to conception.
The Davis and Blake framework organizes the intermediate variables of fertility into three primary categories. One of these categories focuses on factors affecting exposure to conception. These include variables such as the use of contraception and the prevalence of infecundity or sterility, which directly determine whether sexual intercourse will result in a pregnancy within the reproductive lifespan.

288. (B) Fecundity is the physiological capacity to conceive, while fertility is the actual number of births.
In demographic terminology, fecundity refers to the inherent biological and physiological capacity of an individual or couple to conceive and produce a live birth. Fertility, however, refers to the actual reproductive performance or the number of live births realized by an individual or population. While fecundity sets the upper limit, actual fertility is influenced by various behavioral and social factors.

289. (D) To explain how broad social factors influence fertility through direct biological and behavioral mechanisms.
The primary analytical purpose of the Davis and Blake intermediate variable framework is to illustrate how broad social, economic, and environmental factors influence fertility outcomes. These distal factors do not affect birth rates directly; instead, they must operate through a limited set of biological and behavioral proximate variables that directly govern the processes of intercourse, conception, and gestation.

290. (A) the inability to ever bear a child.
Primary sterility is a biological condition defined as the absolute inability of an individual or a couple to ever conceive or produce a live birth throughout their entire reproductive life. This differs from secondary sterility, which is the inability to have more children after at least one successful pregnancy. Primary sterility acts as a fundamental biological constraint on total population fertility.

291. (C) Marriage, contraception, abortion, and postpartum infecundability.
John Bongaarts identified four key proximate determinants that account for most of the variation in fertility levels across different populations. These determinants include marriage patterns, which govern exposure to intercourse; the use and effectiveness of contraception; the prevalence of induced abortion; and the duration of postpartum infecundability, which is largely influenced by the intensity and length of breastfeeding practices.

292. (A) It compares cumulative cohort fertility (P) with current period fertility (F) to check for consistency and make adjustments.
The P/F ratio technique is an indirect estimation method based on the comparison of lifetime cumulative fertility reported by cohorts—represented as P—with current fertility data from a specific period—represented as F. By evaluating the ratio between these two measures across different age groups, demographers can detect errors in birth reporting and adjust period fertility rates for better accuracy.

293. (D) The past, cumulative fertility reported by cohorts (e.g., children ever born).
In the context of the P/F ratio technique, the letter P stands for parity, which refers to the past or cumulative fertility reported by specific age cohorts of women. This data is typically obtained from census or survey questions regarding the total number of children ever born to a woman, providing a historical record of her reproductive lifetime up to that point.

294. (B) The Rele Technique.
The Rele technique is an indirect demographic method used for estimating fertility levels, such as the total fertility rate, from census data. It specifically utilizes child-woman ratios, which compare the number of young children to the number of women in reproductive ages. This method is particularly valuable in contexts where vital registration systems are inadequate for providing direct birth statistics.

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Which of the above are essential components of comprehensive maternal care, particularly Emergency Obstetric Care (EmOC)?
(A) 1 and 2 only
(B) 1, 2, and 3 only
(C) 4 and 5 only
(D) 1, 2, 3, 4, and 5

40. The evolution of ideas about reproductive health has broadened the focus from maternal and child health to include:
(A) All of the above
(B) Adolescent reproductive morbidity
(C) The reproductive rights of individuals and couples
(D) Issues related to STIs and HIV/AIDS

41. Which of the following is a primary strategy to reduce maternal morbidity and mortality in India?
(A) Focusing exclusively on family planning services.
(B) Limiting healthcare services to urban areas.
(C) Promoting institutional deliveries and providing emergency obstetric care.
(D) Discouraging traditional birth attendants.

42. Arrange the following conceptual shifts in public health in their likely historical order of emphasis.
1. Focus on family planning and population control.
2. Comprehensive Reproductive Health approach.
3. Focus on Maternal and Child Health (MCH).
4. Recognition of Reproductive Rights.

Choose the correct sequence from the following:
(A) 1, 3, 2, 4
(B) 3, 1, 2, 4
(C) 2, 4, 1, 3
(D) 4, 2, 3, 1

43. Which statement about Reproductive Tract Infections (RTIs) and Sexually Transmitted Infections (STIs) is correct?
(A) All RTIs are STIs.
(B) RTIs and STIs are mutually exclusive categories.
(C) The terms RTI and STI are obsolete and have been replaced by 'Venereal Disease'.
(D) STIs are a sub-category of RTIs.

44. The International Classification of Diseases (ICD) is primarily used for:
(A) Estimating the burden of disease in Disability-Adjusted Life Years.
(B) Classifying diseases and other health problems for statistical and epidemiological purposes.
(C) Providing treatment guidelines for various diseases.
(D) Calculating the life expectancy of a population.

45. Match the items in List I with those in List II and select the correct option.
List I: (Concept)
P. Reproductive Health
Q. Life Expectancy
R. Epidemiological Transition
S. Morbidity
List II: (Description)
1. The average number of years a person is expected to live.
2. The state of being unhealthy or diseased.
3. A state of well-being in all matters relating to the reproductive system.
4. The shift in disease patterns from communicable to non-communicable diseases.

(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-4, R-1, S-2
(C) P-3, Q-1, R-4, S-2
(D) P-2, Q-1, R-4, S-3

46. Read the following statements and select the correct option.
Statement I: The concept of 'Reproductive Rights' rests on the recognition of the basic right of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children.
Statement II: Reproductive Rights are exclusively concerned with access to abortion services.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

47. Which of the following is an incorrect statement regarding HIV/AIDS?

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(A) HIV/AIDS is a bacterial infection that can be cured with antibiotics.
(B) HIV/AIDS is a type of Sexually Transmitted Infection.
(C) HIV/AIDS has significant social and economic implications beyond its health impact.
(D) HIV/AIDS is a considered a relevant factor in reproductive health.

48. Consider the following statements about causes of death statistics:
1. The International Classification of Diseases (ICD) provides a standardized system for coding causes of death.
2. The tenth revision, ICD-10, was introduced around 1990.
3. In India, verbal autopsy is sometimes used as a source for cause of death statistics in areas without medical certification.
4. Cause of death statistics are not useful for health planning.

Which of the above statements are correct?
(A) 1 and 4 only
(B) 2 and 3 only
(C) 1, 2, and 3 only
(D) 2, 3, and 4 only

49. What is the primary need for studying the 'Burden of Disease'?
(A) To exclusively track the incidence of infectious diseases.
(B) To provide a comprehensive picture of the comparative magnitude of health problems.
(C) To calculate the crude death rate for a country.
(D) To list all possible diseases known to medicine.

50. The concept of 'life expectancy' at birth refers to:
(A) The average number of years a newborn infant would live if current mortality rates were to continue.
(B) The maximum possible age that all individuals in a given cohort are expected to reach before death.
(C) The peak chronological age ever attained by any single individual within a specific population.
(D) The specific number of years an individual has already completed from birth to the current date.

51. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): Population ageing leads to an increase in the burden of non-communicable diseases (NCDs).
Reason (R): The prevalence of chronic and degenerative diseases, such as heart disease and diabetes, increases with age.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

52. The term 'Disability-Free Life Expectancy' (DFLE) is a measure that combines:
(A) Morbidity and fertility
(B) Fertility and mortality
(C) Migration and mortality
(D) Mortality and morbidity

53. Which of the following best defines 'Disability-Free Life Expectancy'?
(A) The total number of years a person is expected to live.
(B) The average age at which disability begins in a population.
(C) The number of years a person is expected to live without any disability.
(D) The percentage of the population living with a disability.

54. Consider the following statements regarding the global burden of disease:
1. The leading causes of death are the same in all regions of the world.
2. Non-communicable diseases are becoming a major cause of death in Asia and India.
3. The distribution of deaths by main causes does not vary by age.
4. Burden of disease estimates help in prioritizing health interventions.
5. Life expectancy is the sole measure used to assess the burden of disease.

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Which of the above statements are correct?
(A) 1 and 3 only
(B) 2 and 4 only
(C) 1, 3 and 5 only
(D) 2, 4 and 5 only

55. A late neo-natal death is defined as a death occurring during which period?
(A) Between 28 weeks of gestation and 7 days after birth.
(B) Between birth and 28 days of life.
(C) Between 28 days and one year of life.
(D) Between 7 days and 28 completed days of life.

56. Which of the following is NOT typically considered a form of pregnancy wastage?
(A) Ectopic pregnancy
(B) Miscarriage
(C) Abortion
(D) Fetal death

57. Match the items in List I with those in List II and select the correct option.
List I: (Measure)
P. Incidence Rate
Q. Life Expectancy
R. Maternal Mortality Rate
S. Case-Fatality Ratio
List II: (Focus Area)
1. Obstetric risk and quality of maternal care
2. Virulence of a disease
3. New cases of a disease
4. Overall mortality level of a population
(A) P-3, Q-4, R-1, S-2
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-1, R-2, S-4
(D) P-4, Q-3, R-1, S-2

58. Read the following statements and select the correct option.
Statement I: The UN Model Life Tables are a collection of life tables that represent various patterns of mortality by age and sex.
Statement II: Model Life Tables are used when reliable empirical life tables cannot be constructed for a population.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

59. Which of the following statements about the construction and use of life tables is incorrect?
(A) A life table follows a hypothetical cohort of 100,000 births as they pass through successive ages.
(B) Life tables can be used to project population size and structure.
(C) A core assumption is that the cohort is closed to migration.
(D) The construction of a life table requires data on fertility rates.

60. Consider the following determinants of child survival from the Mosley and Chen framework:
1. Maternal factors (age, parity, education)
2. Environmental contamination (air, food, water)
3. Nutrient availability
4. Personal illness control (preventive and curative measures)
Which of these are classified as proximate determinants that directly influence the risk of morbidity and mortality?
(A) 1 only
(B) 1 and 2 only
(C) 2, 3, and 4 only
(D) 1, 2, 3, and 4

61. What is the fundamental difference between 'direct' and 'indirect' standardization of mortality rates?
(A) Direct standardization is used for infant mortality, while indirect is used for maternal mortality.
(B) Direct standardization can only be used in developed countries, while indirect is for developing countries.
(C) Direct standardization uses a standard population's age structure, while indirect uses a standard population's age-specific death rates.
(D) Direct standardization requires cause-of-death data, while indirect does not.

62. In a community with a population of 50,000, there were 2,000 live births and 400 deaths in a specific year. What is the Crude Death Rate (CDR) for that year?
(A) 20 per 1,000
(B) 40 per 1,000
(C) 200 per 1,000

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1. There are significant mortality differentials by place of residence (urban vs. rural).
2. Socio-economic characteristics like education and wealth have a strong influence on mortality rates.
3. Age-specific mortality curves for males and females are identical.
4. Mortality rates are uniform across all states of India.
5. The primary cause of high mortality in the past was non-communicable diseases.

Which of the above statements are correct?
(A) 3 and 5 only
(B) 1 and 2 only
(C) 1, 2 and 4 only
(D) 3, 4 and 5 only

128. What is the fundamental rationale behind the concept of 'Reproductive Health'?
(A) People should be able to have a responsible, satisfying, and safe sex life and the capability to reproduce and the freedom to decide if, when, and how often to do so.
(B) The belief that population growth in developing regions must be controlled through strict legal and social mandates.
(C) The strategy where the primary objective of national health services is to increase birth rates to support the economy.
(D) The preservation of traditional family structures without any changes to social norms or reproductive access.

129. The term `qx` in a life table represents:
(A) The number of people alive at age x.
(B) The probability that an individual alive at age x will die before reaching age x+1.
(C) The number of deaths between age x and x+1.
(D) The life expectancy at age x.

130. Match the items in List I with those in List II and select the correct option.
List I: (Term)
P. Endogenous Infant Mortality
Q. Exogenous Infant Mortality
R. Maternal Morbidity
S. Adolescent Reproductive Morbidity
List II: (Characteristic)
1. Illness related to pregnancy and childbirth
2. Deaths due to environmental factors after birth
3. Deaths due to factors related to pregnancy and delivery
4. Health issues like early pregnancy, STIs in young people
(A) P-1, Q-2, R-4, S-3
(B) P-4, Q-3, R-1, S-2
(C) P-3, Q-2, R-1, S-4
(D) P-3, Q-1, R-2, S-4

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131. Read the following statements and select the correct option.
Statement I: The Infant Mortality Rate (IMR) is calculated using the total mid-year population as the denominator.
Statement II: The Under-Five Mortality Rate (U5MR) is calculated using the total number of live births as the denominator.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

132. The quality of mortality data is often assessed by its:
(A) Coverage (completeness) and accuracy of cause-of-death reporting.
(B) Simplicity and ease of calculation.
(C) Correlation with fertility rates.
(D) Consistency with data from developed countries.

133. Consider the following:
1. Low Birth Weight
2. Congenital Malformation
3. Birth Injury
4. Diarrhea

Which of the above are considered Endogenous causes of infant mortality?
(A) 4 only
(B) 1 and 2 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

134. Which measure provides information on the number of existing cases of a disease in a population at a specific point in time?
(A) Incidence
(B) Case-fatality ratio
(C) Prevalence
(D) Crude Death Rate

that has a negative impact on the woman's wellbeing.
(C) The total number of live births a woman has experienced over her reproductive life.
(D) An infectious disease contracted during pregnancy that impacts the health of the mother and child.

71. A major reason for the historical decline in mortality in many developing countries was:
(A) The adoption of sedentary lifestyles.
(B) A significant increase in the fertility rate.
(C) A focus on treating non-communicable diseases.
(D) The import and application of public health measures and medical technologies from developed countries.

72. Match the items in List I with those in List II and select the correct option.
List I: (Term)
P. Endogenous cause of IMR
Q. Proximate determinant (Mosley-Chen)
R. Socio-economic differential
S. Morbidity indicator
List II: (Example/Category)
1. Prevalence Rate
2. Low birth weight
3. Mortality difference by wealth quintile
4. Nutrient intake
(A) P-1, Q-3, R-2, S-4
(B) P-2, Q-4, R-3, S-1
(C) P-2, Q-1, R-4, S-3
(D) P-3, Q-4, R-1, S-2

73. Read the following statements and select the correct option.
Statement I: Indirect standardization of mortality rates is preferred over direct standardization when the age-specific death rates for a study population are unknown or unreliable.
Statement II: Indirect standardization involves applying the age-specific death rates of a standard population to the study population's age structure.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

74. A complete life table is one in which the age interval used is:
(A) One year
(B) Ten years
(C) Five years
(D) Dependent on the data quality

75. Consider the following factors:
1. Age structure of the population
2. Sex composition of the population
3. Socio-economic conditions
4. Quality of the vital registration system
Which of the above factors can influence the measured Crude Death Rate of a country?
(A) 1 only
(B) 1 and 2 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

76. In the context of Burden of Disease estimates, which measure combines years of life lost due to premature mortality and years lived with disability?
(A) Disability-Free Life Expectancy (DFLE)
(B) Disability-Adjusted Life Year (DALY)
(C) Quality-Adjusted Life Year (QALY)
(D) Standardized Mortality Ratio (SMR)

77. Which of the following defines 'Prevalence' of a disease?
(A) The number of new cases occurring in a defined population during a specific period of time.
(B) The number of deaths caused by the disease in a population.
(C) The total number of cases, new and old, existing in a defined population at a specific point in time or over a period of time.
(D) The probability of an individual contracting the disease during their lifetime.

78. Adolescent reproductive morbidity is a significant concern because:
(A) Adolescents are biologically less susceptible to reproductive health problems.
(B) This age group experiences the lowest rates of STIs.
(C) Reproductive health issues in adolescence have no long-term consequences.
(D) Adolescents often lack access to accurate information and health services.

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a higher CDR, even if its underlying health conditions are better.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

95. In the context of causes of death statistics, what does "ICD-X (1990)" refer to?
(A) The 10th revision of the International Classification of Diseases, implemented around 1990.
(B) A specific model life table developed in 1990.
(C) An indirect method for estimating child mortality from 1990.
(D) The 10th international conference on disease statistics held in 1990.

96. Which of the following measures is most affected by short-term events like a flu epidemic or a natural disaster?
(A) Life expectancy at birth
(B) Crude Death Rate
(C) Age-standardized death rate
(D) Disability-Free Life Expectancy

97. Consider the following health issues:
1. Complications from unsafe abortion
2. Adolescent pregnancy
3. Reproductive Tract Infections (RTIs)
4. Maternal morbidity
5. HIV/AIDS

Which of the above are typically classified under the broad topic of Reproductive Health?
(A) 1 and 4 only
(B) 2, 3 and 5 only
(C) 1, 2, 3 and 4 only
(D) 1, 2, 3, 4 and 5

98. The term 'post-natal mortality rate' is conceptually the same as:
(A) Infant mortality rate
(B) Post neo-natal mortality rate
(C) Neo-natal mortality rate
(D) Child mortality rate

99. An abridged life table is one where the age intervals are typically:
(A) One year
(B) Five years
(C) Ten years or more
(D) Six months

100. Arrange the following causes of death according to the typical progression of the epidemiological transition.
1. Degenerative diseases (e.g., heart disease, cancer)
2. Pestilence and famine (e.g., plague, starvation)
3. Receding pandemics (e.g., cholera, tuberculosis)

Choose the correct sequence of stages from the following:
(A) 1, 2, 3
(B) 2, 1, 3
(C) 2, 3, 1
(D) 3, 2, 1

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101. The key difference between Incidence and Prevalence is that:
(A) Incidence refers to new cases, while Prevalence refers to all existing cases.
(B) Incidence is a ratio, while Prevalence is a rate.
(C) Incidence measures mortality, while Prevalence measures morbidity.
(D) Incidence is used for chronic diseases, while Prevalence is used for infectious diseases.

102. In a town, 100 people were diagnosed with a specific disease in 2022. Over the course of the year, 10 of these 100 people died from the disease. What is the case-fatality ratio?
(A) 10%
(B) 100%
(C) 1%
(D) It cannot be calculated from the given information.

103. Match the items in List I with those in List II and select the correct option.
List I: (Health Concept)
P. Burden of Disease
Q. Reproductive Rights
R. Epidemiological Transition
S. Life Table Application
List II: (Primary Focus)
1. Quantifying and comparing the impact of

87. Which of the following is an example of an indirect method for estimating infant and child mortality?
(A) India has fully transitioned to a profile dominated by non-communicable diseases, similar to developed countries.
(B) India is still primarily burdened by infectious diseases, with a very low prevalence of chronic illness.
(C) India is experiencing a protracted and polarized transition, with a dual burden of both communicable and non-communicable diseases.
(D) The epidemiological transition model does not apply to the Indian context.

88. Match the items in List I with those in List II and select the correct option.
List I: (Term)
P. ICD-X
Q. Mosley-Chen Framework
R. UN Model Life Table
S. Emergency Obstetric Care
List II: (Relevance/Context)
1. Indirect estimation of mortality
2. Child survival determinants
3. Strategies to reduce maternal mortality
4. Standardization of causes of death statistics
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-3, R-2, S-1
(C) P-4, Q-2, R-1, S-3
(D) P-2, Q-1, R-4, S-3

89. Read the following statements and select the correct option.
Statement I: The concept of reproductive health evolved from earlier, narrower programs that focused only on family planning.
Statement II: The comprehensive approach to reproductive health includes addressing issues like STIs, maternal health, and adolescent health.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

90. An 'incorrect pair' of mortality term and definition is:
(A) Live birth: Evidence of life after birth, regardless of gestation period.
(B) Infant death: Death before 5 years of age.
(C) Post neo-natal death: Death between 28 days and 1 year.
(D) Still birth: Fetal death after a defined period of gestation (e.g., 28 weeks).

91. Consider the following statements related to mortality data:
1. Sources of mortality data include vital registration systems, censuses, and surveys.
2. The completeness of death registration is a key indicator of data quality.
3. Indirect estimation techniques are used when direct data is of high quality.
4. Relative demerits of CDR include its sensitivity to age structure.
Which of the above statements are correct?
(A) 1, 2 and 4 only
(B) 1 and 3 only
(C) 2, 3 and 4 only
(D) 1, 2, 3 and 4

92. The calculation of the Under-five Mortality Rate (U5MR) uses which denominator?
(A) Total mid-year population.
(B) Total number of live births in a given year.
(C) Total number of children under five.
(D) Total number of deaths of children under five.

93. If a country's life expectancy at birth is increasing, but its disability-free life expectancy is not increasing at the same rate, what does this imply?
(A) The quality of mortality data is poor.
(B) Infant mortality rates are increasing.
(C) People are living longer but spending more years in a state of ill-health or disability.
(D) People are living shorter, healthier lives.

94. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): Standardization is a necessary procedure for comparing mortality between populations with different age structures.
Reason (R): The Crude Death Rate can be misleading because a population with a higher proportion of older people will likely have

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(D) 8 per 1,000

63. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): The Maternal Mortality Rate (MMR) is a more sensitive indicator of the quality of a healthcare system than the Crude Death Rate (CDR).
Reason (R): Maternal deaths are largely preventable with timely and adequate medical intervention, including emergency obstetric care.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

64. What does the term 'epidemiological transition' refer to in the context of public health?
(A) The shift from high birth and death rates to low birth and death rates over time.
(B) The long-term shift in mortality whereby pandemics of infection are replaced by degenerative diseases.
(C) The increasing speed at which epidemics spread due to the impacts of global travel and trade.
(D) The transition of a disease from being an epidemic to becoming strictly endemic in a population.

65. Which of the following is not typically considered a component of Reproductive Health?
(A) Maternal morbidity
(B) Geriatric care
(C) Emergency obstetric care
(D) Abortion related issues

66. Consider the following statements regarding mortality:
1. Endogenous causes of infant mortality include congenital malformations and prematurity.
2. Exogenous causes of infant mortality include infectious diseases and accidents.
3. The Mosley-Chen framework focuses exclusively on economic factors affecting child survival.
4. Levels of infant and child mortality in India are uniform across all states.
5. High mortality in the past was primarily due to chronic, non-communicable diseases.

Which of the above statements are correct?
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2 and 5 only
(D) 3, 4 and 5 only

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67. The concept of 'Reproductive Rights' as discussed in public health includes the right to:
(A) Attain the highest standard of sexual and reproductive health.
(B) Make decisions concerning reproduction free of discrimination, coercion and violence.
(C) All of the above.
(D) Have access to information and a full range of safe and affordable contraception.

68. The primary data source for calculating the Maternal Mortality Rate (MMR) in India with reasonable accuracy at the national level has often been:
(A) The Civil Registration System (CRS)
(B) The National Family Health Survey (NFHS)
(C) Hospital admission records
(D) The Sample Registration System (SRS)

69. Arrange the following mortality events in the order they occur in the human life course.
1. Child Death
2. Post Neo-natal Death
3. Neo-natal Death
4. Still Birth

Choose the correct sequence from the options below:
(A) 4, 3, 2, 1
(B) 3, 4, 2, 1
(C) 4, 2, 3, 1
(D) 2, 3, 1, 4

70. Which of the following is the best description of 'Maternal Morbidity'?
(A) The death of a woman occurring during pregnancy or within 42 days of childbirth.
(B) Any health condition attributed to and/or aggravated by pregnancy and childbirth

various diseases and injuries.
2. Analyzing patterns of mortality and survival.
3. Autonomy and decision-making in fertility and family.
4. Long-term shifts in dominant disease patterns.

(A) P-1, Q-3, R-4, S-2
(B) P-2, Q-4, R-1, S-3
(C) P-1, Q-2, R-3, S-4
(D) P-4, Q-3, R-2, S-1

104. Read the following statements and select the correct option.
Statement I: Life expectancy at birth is calculated based on the assumption that the mortality rates prevailing at the time of birth will remain constant throughout the life of the newborn cohort.
Statement II: A life table is constructed based on observed death rates in a real cohort as it ages from birth to death.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

105. Which statement about the UN Model Life Tables is incorrect?
(A) They are based on empirical life tables from many countries.
(B) They are grouped into "families" or "regions" (e.g., West, North, South, East) representing different mortality patterns.
(C) They are used when a country has perfect and complete mortality data.
(D) They allow for the estimation of a full life table from limited data, such as an infant or child mortality rate.

106. Consider the following statements about causes of death in Asia and India:
1. Non-communicable diseases (NCDs) are a leading cause of death.
2. The distribution of causes of death is identical for all age groups.
3. Infectious diseases have been completely eradicated.
4. Data from the ICD-X classification system helps in understanding these patterns.

Which of the above statements are correct?
(A) 1 and 4 only
(B) 2 and 3 only
(C) 1, 2, and 3 only
(D) 2, 3, and 4 only

107. The 'relative merit' of using Infant Mortality Rate (IMR) as a health indicator is its:
(A) Simplicity in calculation, as it does not require live birth data.
(B) Stability and lack of fluctuation from year to year.
(C) Sensitivity to socio-economic conditions and the quality of the healthcare system.
(D) Independence from the quality of death registration.

108. In the context of reproductive health, 'abortion related issues' would likely include all of the following EXCEPT:
(A) Legal and ethical frameworks surrounding abortion.
(B) Post-abortion care and complications.
(C) The promotion of abortion as a primary family planning method.
(D) The incidence of safe versus unsafe abortions.

109. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): The Mosley and Chen framework is useful for analyzing the determinants of child survival in developing countries.
Reason (R): It connects socioeconomic determinants (e.g., education, income) to child mortality through a set of intermediate variables or proximate determinants (e.g., nutrition, hygiene).
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

110. The main reason for high mortality in the past in countries that are now developed was primarily:
(A) Poor control over infectious diseases, poor sanitation, and frequent famines.

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79. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): HIV/AIDS has significant implications for maternal and child health.
Reason (R): HIV can be transmitted from a mother to her child during pregnancy, childbirth, or breastfeeding.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

80. The primary purpose of the International Classification of Diseases (ICD-10) is to:
(A) Recommend specific treatments for various diseases.
(B) Promote a standard way of reporting and monitoring diseases and causes of death.
(C) Estimate the economic burden of disease on a country.
(D) Rank hospitals based on their quality of care.

81. Which of the following is an example of an 'Ethical Issue' in reproductive health?
(A) Calculating the infant mortality rate.
(B) The debate over sex-selective abortion and prenatal sex determination.
(C) The use of antibiotics to treat an infection.
(D) Constructing a life table for a population.

82. Consider the following statements regarding the burden of disease in India:
1. There is a "double burden" of both communicable and non-communicable diseases.
2. The burden of disease is uniform across all states and Union Territories.
3. Ageing of the population is contributing to an increased burden of chronic diseases.
4. The burden of disease estimates are not useful for state-level health planning.
5. Injuries contribute significantly to the overall burden of disease.

Which of the above statements are correct?
(A) 1, 2 and 4 only
(B) 2 and 4 only
(C) 1, 3 and 5 only
(D) 2, 4 and 5 only

83. The distinction between a 'miscarriage' and a 'still birth' is primarily based on:
(A) Whether the termination was spontaneous or induced.
(B) The duration of the gestation period.
(C) The place where the event occurred (hospital or home).
(D) The socio-economic status of the mother.

84. In life table terminology, Tx represents:
(A) The total number of person-years lived by the cohort from age x until the last member dies.
(B) The probability of surviving from age x to age x+1.
(C) The central death rate for the age interval x to x+n.
(D) The radix or starting population of the life table.

85. Arrange the following mortality indicators from the one that typically represents the lowest rate to the one that represents the highest rate in a standard developing country population.
1. Crude Death Rate (CDR)
2. Infant Mortality Rate (IMR)
3. Under-Five Mortality Rate (U5MR)
4. Neo-natal Mortality Rate (NMR)

Choose the correct sequence from the following:
(A) 1, 4, 2, 3
(B) 1, 2, 3, 4
(C) 4, 1, 2, 3
(D) 2, 4, 1, 3

86. One of the major relative merits of Age-Specific Death Rates (ASDRs) over the Crude Death Rate (CDR) is that ASDRs:
(A) Are easier and cheaper to calculate.
(B) Are not affected by the age composition of the population.
(C) Can be calculated without knowing the total population size.
(D) Provide a single, easily comparable figure for overall mortality.

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119. Read the following statements and select the correct option.
Statement I: Morbidity is concerned with the levels of health and well-being of a population.
Statement II: Mortality is concerned with the incidence and prevalence of disease in a population.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

120. Which of the following is an incorrect pair of a mortality measure and its primary use?
(A) CDR: A simple measure of overall mortality in a population.
(B) IMR: A sensitive indicator of a country's health and socioeconomic status.
(C) ASDR: To compare mortality at different ages within or between populations.
(D) MMR: To measure the mortality risk associated with all causes in the female population.

121. Consider the following statements about 'Reproductive Health':
1. It is solely concerned with the health of mothers and children.
2. It includes the concept of making informed choices about reproduction.
3. The evolution of the idea involved a shift from a narrow family planning focus to a broader, more holistic view.
4. It is not related to Sexually Transmitted Infections (STIs).

Which of the above statements are correct?
(A) 1 and 4 only
(B) 2 and 3 only
(C) 1, 2, and 3 only
(D) 2, 3, and 4 only

122. A key component of strategies to reduce maternal mortality in India is:
(A) Focusing on traditional healing practices.
(B) Improving access to and quality of Emergency Obstetric Care (EmOC).
(C) Mandating a maximum of two children per family.
(D) Providing financial incentives for home births.

123. The 'Burden of Disease' is a concept that aims to:
(A) Quantify the gap between a population's current health status and an ideal situation where everyone lives into old age, free of disease and disability.
(B) Exclusively count the number of deaths from infectious diseases to track the spread of pandemics.
(C) List all communicable diseases prevalent in a region for the purpose of medical classification.
(D) Calculate the financial cost of healthcare for a nation to assist in setting economic budgets.

124. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): The age structure of a population is a key determinant of its Crude Death Rate.
Reason (R): All age groups in a population have the same probability of dying.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

125. The transition from a disease pattern dominated by infections to one dominated by chronic diseases is known as:
(A) Demographic Transition
(B) Epidemiological Transition
(C) Morbidity Compression
(D) Health Transition

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126. Which of the following is NOT an application of the life table in demographic analysis?
(A) Calculation of life expectancy at various ages.
(B) Analysis of marital status and family life cycles (multi-state life tables).
(C) Calculation of net reproduction rate.
(D) Calculation of the Crude Birth Rate.

127. Consider the following statements related to mortality patterns in India:

(B) The lack of any significant understanding of reproductive health and rights.
(C) High levels of chronic, non-communicable diseases affecting the elder population.
(D) Low fertility rates leading to a rapid and uncontrolled population decline.

111. Which of the following is an example of an indirect method for estimating infant and child mortality?
(A) Calculating rates directly from a complete vital registration system.
(B) Using data from hospital records on the number of infant deaths.
(C) Conducting a verbal autopsy for each reported death.
(D) Applying the Brass method to census data on children ever born and children surviving.

112. Consider the following:
1. Late neo-natal death
2. Early neo-natal death
3. Post neo-natal death
4. Fetal death
5. Child death

Which of the above are components of under-five mortality?
(A) 1, 2 and 3 only
(B) 1, 2, 3 and 5 only
(C) 4 and 5 only
(D) 1, 2, 3, 4 and 5

113. The study of the distribution of deaths by main causes and by age is essential for:
(A) Calculating the crude birth rate.
(B) Setting priorities for public health interventions and resource allocation.
(C) Determining the national migration policy.
(D) Estimating the total population size.

114. The concept of 'health' as defined by the World Health Organization is best described as:
(A) The physical absence of any diagnosed medical condition or detectable disease.
(B) The capacity of an individual to perform daily activities without external aid.
(C) A state of complete physical, mental, and social well-being, not merely the absence of disease.
(D) The statistical life expectancy measured for a specific national population.

115. Arrange the following steps in the construction of a life table from Age-Specific Death Rates (ASDRs) in the correct logical sequence.
1. Calculate the probability of dying (nqx).
2. Calculate the number of survivors at each age (lx).
3. Obtain the age-specific death rates (nMx).
4. Calculate the number of deaths in each age interval (ndx).

Choose the correct sequence from the following:
(A) 3, 1, 4, 2
(B) 2, 4, 1, 3
(C) 3, 1, 2, 4
(D) 1, 2, 3, 4

116. A demographer wishes to compare the death rate of a company's employees (who are mostly working-age adults) with the general population of the city. A direct comparison of Crude Death Rates would be misleading. Which technique should be used?
(A) Incidence rate calculation
(B) Life table construction
(C) Case-fatality ratio
(D) Indirect standardization

117. Which of the following is NOT a primary source of morbidity data?
(A) Disease registries
(B) Population-based health interview surveys
(C) Records from physicians' practices and hospitals
(D) Death certificates from the vital registration system

118. Match the items in List I with those in List II and select the correct option.
List I: (Mortality Period)
P. Infant Mortality
Q. Child Mortality
R. Neonatal Mortality
S. Post-neonatal Mortality

List II: (Timeframe)
1. Between 1 and 5 years of age
2. Before the first birthday
3. Between 28 days and 1 year of age
4. In the first 28 days of life

(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-1, R-4, S-3
(C) P-2, Q-4, R-1, S-3
(D) P-3, Q-1, R-4, S-2

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135. A key ethical issue related to reproductive health that is often debated in many societies is:
(A) The use of life tables for insurance purposes.
(B) The right to access contraception versus religious objections.
(C) The standardization of death rates for international comparison.
(D) The calculation of disability-free life expectancy.

136. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): Life expectancy and disability-free life expectancy are important measures for understanding population health.
Reason (R): Life expectancy measures the quantity of life, while disability-free life expectancy also provides an indication of the quality of life in terms of health.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

137. Which of the following is NOT a direct measure of mortality?
(A) Crude Death Rate (CDR)
(B) Age-Specific Death Rate (ASDR)
(C) Life Expectancy at birth (e0)
(D) Infant Mortality Rate (IMR)

138. Which statement best describes the relationship between socio-economic characteristics and mortality?
(A) Mortality rates are solely determined by genetic factors.
(B) Factors like income, education, and occupation are correlated with life expectancy and survival rates.
(C) All socio-economic groups experience the same level of mortality.
(D) Socio-economic factors only affect morbidity, not mortality.

139. Consider the following statements about morbidity:
1. Morbidity refers to the condition of being unhealthy.
2. Incidence and Prevalence are key indicators of morbidity.
3. Sources of morbidity data include health surveys and hospital records.
4. Morbidity data is irrelevant for health policy formulation.
5. The epidemiological transition primarily concerns changes in morbidity patterns.

Which of the above statements are correct?
(A) 1, 4 and 5 only
(B) 2, 3 and 4 only
(C) 1, 2, 3 and 5 only
(D) 1, 2, 3, 4 and 5

140. A primary goal of implementing Emergency Obstetric Care (EmOC) services is to:
(A) Reduce maternal deaths by managing complications of pregnancy and childbirth.
(B) Encourage family planning and contraception use.
(C) Provide routine antenatal check-ups.
(D) Improve child nutrition and immunization.

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141. The shift in leading causes of death from infectious diseases like pneumonia and diarrhea to chronic diseases like heart disease and cancer is a hallmark of:
(A) The demographic dividend
(B) Population ageing
(C) The epidemiological transition
(D) The fertility transition

142. Arrange the following life table columns in the order they are typically calculated.
1. lx (Number surviving to age x)
2. qx (Probability of dying)
3. ex (Life expectancy at age x)
4. Lx (Person-years lived)

Choose the correct sequence from the following:
(A) 1, 2, 4, 3
(B) 2, 1, 4, 3
(C) 2, 1, 3, 4
(D) 1, 4, 2, 3

143. Which of the following is the most accurate statement regarding mortality in developed and developing regions?
(A) Developed regions have higher infant mortality rates than developing regions.

(B) The total number of live births in the year.
(C) The total mid-year population.
(D) The total number of deaths in the year.

211. Which of the following is NOT a common rationale for the focus on Reproductive Health?
(A) It addresses a major cause of morbidity and mortality for women of childbearing age.
(B) It involves issues of human rights and equity.
(C) Its scope is limited to increasing the birth rate.
(D) It has implications for the health of adolescents, men, and women throughout their lives.

212. Consider the following mortality rates:
1. Infant Mortality Rate
2. Crude Death Rate
3. Under-Five Mortality Rate
4. Maternal Mortality Rate
5. Neo-natal Mortality Rate

Which of the above are considered key indicators of child and maternal health?
(A) 1, 2, and 3 only
(B) 1, 3, 4, and 5 only
(C) 2 and 4 only
(D) All of the above

213. A key assumption in constructing a period life table from ASDRs is that:
(A) The cohort is subject to migration.
(B) The age-specific death rates observed in the specified period will apply to the cohort throughout its life.
(C) The birth rate is constant.
(D) The ASDRs will decrease over time for the cohort.

214. The term 'morbidity' refers to:
(A) The rate of death in a population.
(B) The study of population structure.
(C) The incidence and prevalence of disease and illness in a population.
(D) The life expectancy at birth.

215. Arrange the following mortality concepts in order from conception to the first year of life.
1. Post-natal death
2. Fetal death
3. Neo-natal death

Choose the correct sequence from the following:
(A) 2, 3, 1
(B) 3, 2, 1
(C) 1, 3, 2
(D) 2, 1, 3

216. The introduction of the International Classification of Diseases (ICD) was a major step forward for:
(A) Improving the comparability and statistical analysis of cause of death data.
(B) Estimating fertility rates.
(C) Calculating life expectancy without death data.
(D) Promoting reproductive rights.

217. A significant mortality differential by 'place of residence' in India means that:
(A) People in urban and rural areas have different genetic makeups.
(B) Mortality rates differ between urban and rural populations.
(C) Everyone in a city has the same mortality risk.
(D) Place of residence is the only factor that determines mortality.

218. Match the items in List I with those in List II and select the correct option.
List I: (Indicator)
P. IMR
Q. MMR
R. CDR
S. ASDR
List II: (What it primarily measures)
1. Overall mortality, influenced by age structure.
2. Mortality risk for a specific age group.
3. Risk of death associated with childbirth.
4. Child survival in the first year of life.
(A) P-4, Q-3, R-1, S-2
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-1, R-3, S-2
(D) P-3, Q-4, R-1, S-2

219. Read the following statements and select the correct option.
Statement I: Indirect standardization is a technique used to compare the mortality rates of two populations.
Statement II: It is typically used when the age-

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(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

152. In a hypothetical scenario, a new virus emerges. In one city, 1,000 people get infected and 50 die. In another city, 2,000 people get infected and 100 die. What can be concluded about the Case-Fatality Ratio (CFR) in the two cities?
(A) The CFR is higher in the first city.
(B) The CFR is higher in the second city.
(C) The CFR is the same in both cities.
(D) The CFR cannot be compared without knowing the total population.

153. Which of the following best represents an 'application of life table in demographic analysis'?
(A) Projecting the future population by age and sex.
(B) Calculating the Crude Birth Rate of a population.
(C) Measuring the prevalence of a specific disease.
(D) Estimating the number of hospital beds required.

154. Consider the following statements about mortality measures:
1. The Crude Death Rate is a good indicator for comparing mortality between two populations with different age structures.
2. The Infant Mortality Rate is a sensitive indicator of the overall health and socioeconomic development of a country.
3. The Maternal Mortality Rate reflects the quality of obstetric care available to women.
4. Age-Specific Death Rates provide a detailed picture of mortality patterns across the lifespan.
5. The Under-Five Mortality Rate is less comprehensive than the Infant Mortality Rate.

Which of the above statements are correct?
(A) 1, 2 and 3 only
(B) 2, 3 and 4 only
(C) 1, 4 and 5 only
(D) 2, 3, 4 and 5

155. A "still birth" is distinguished from a "live birth followed by an early neonatal death" by the absence of:
(A) A birth certificate.
(B) The mother's consent.
(C) Signs of life (breathing, heartbeat, etc.) at the time of birth.
(D) A gestation period of at least 37 weeks.

156. The use of Model Life Tables is most justified in which of the following scenarios?
(A) A country like Sweden with a long history of excellent vital statistics.
(B) A sub-national region in a developing country with no reliable death registration system.
(C) A study comparing cause-specific mortality in two large cities.
(D) A historical analysis where complete parish records are available.

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157. Match the items in List I with those in List II and select the correct option.
List I: (Concept)
P. Standardization
Q. Morbidity
R. Epidemiological Transition
S. Burden of Disease
List II: (Key Idea)
1. Shift from infectious to chronic diseases.
2. Adjusting for age structure to allow comparison.
3. The state of ill-health in a population.
4. Measuring mortality and disability combined.
(A) P-1, Q-3, R-2, S-4
(B) P-2, Q-3, R-1, S-4
(C) P-2, Q-4, R-1, S-3
(D) P-3, Q-1, R-4, S-2

158. Read the following statements and select the correct option.
Statement I: Endogenous infant deaths are those due to causes originating from the external environment after birth.
Statement II: Exogenous infant deaths are those due to causes related to fetal development and the birth process, such as congenital anomalies.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.

(D) Statement I is false, but Statement II is true.

159. Which of the following would be classified as a source of morbidity data?
(A) Census records on population size.
(B) National Family Health Survey (NFHS) data on self-reported illness.
(C) Sample Registration System (SRS) data on deaths.
(D) Civil Registration System (CRS) data on births.

160. Consider the following:
1. Maternal education
2. Household income
3. Access to clean water
4. Immunization coverage

Which of the above are considered socio-economic (or distal) determinants of child survival in the Mosley and Chen framework?
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2, and 3 only
(D) All four are proximate determinants.

161. One of the main demerits of the Crude Death Rate (CDR) is that:
(A) It is very difficult and expensive to compute.
(B) It can be misleading when comparing populations with different age structures.
(C) It only measures deaths among infants.
(D) It requires detailed cause-of-death information for its calculation.

162. In a city of 200,000 people, there were 4,000 live births in a year. During the same year, 80 infants died before their first birthday. What is the Infant Mortality Rate (IMR)?
(A) 20 per 1,000 live births
(B) 40 per 1,000 live births
(C) 80 per 1,000 live births
(D) 2 per 1,000 live births

163. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): The concept of reproductive health is broader than the concept of maternal and child health.
Reason (R): Reproductive health encompasses the entire life cycle and includes aspects like adolescent health, STIs, and reproductive rights, not just the health of mothers and infants.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

164. "The number of deaths due to a disease that occur among people who are afflicted with that disease" is the definition of:
(A) Incidence rate
(B) Case-fatality ratio
(C) Prevalence rate
(D) Crude death rate

165. Which of the following is NOT typically considered a primary component of Reproductive Health?
(A) Emergency obstetric care
(B) HIV/AIDS
(C) National Burden of Disease Estimates
(D) Adolescent reproductive morbidity

166. Consider the following statements about life tables:
1. They are built on the mortality experience of a real cohort followed from birth to death.
2. A key assumption is that the population is closed to migration.
3. `e0` represents the life expectancy at age 0, or at birth.
4. They can be of two types: complete (single-year) and abridged (multi-year intervals).
5. Model life tables are used when empirical data is perfect.

Which of the above statements are correct?
(A) 1, 2 and 3 only
(B) 2, 3 and 4 only
(C) 1, 4 and 5 only
(D) 3, 4 and 5 only

167. An important factor responsible for high mortality in the past was:
(A) Low fertility.
(B) High prevalence of chronic diseases like cancer.
(C) Poor sanitation and lack of safe drinking

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water.
(D) Widespread use of contraception.

168. The difference between life expectancy and disability-free life expectancy represents:
(A) The average number of years lived with a disability.
(B) The infant mortality rate.
(C) The total number of deaths in a population.
(D) The average age of the population.

169. Arrange the following mortality rates for a typical high-mortality developing country from highest to lowest value.
1. Under-Five Mortality Rate (U5MR)
2. Infant Mortality Rate (IMR)
3. Neonatal Mortality Rate (NMR)

Choose the correct sequence from the options below:
(A) 1, 2, 3
(B) 3, 2, 1
(C) 2, 1, 3
(D) 1, 3, 2

170. Which of the following is a direct measure of mortality risk in a specific age group?
(A) Age-Specific Death Rate (ASDR)
(B) Crude Death Rate (CDR)
(C) Life Expectancy (ex)
(D) Total number of deaths

171. Which statement best reflects the current scenario of the burden of disease in India?
(A) A singular burden of infectious diseases.
(B) A singular burden of non-communicable diseases.
(C) A dual burden of both communicable and non-communicable diseases, with significant state-level variations.
(D) A complete absence of data on the burden of disease.

172. Match the items in List I with those in List II and select the correct option.
List I: (Term)
P. CDR
Q. IMR
R. Prevalence
S. Case-Fatality Ratio
List II: (Calculation)
1. (Number of deaths from a disease / Number of cases of that disease) x 100
2. (Total deaths / Total population) x 1000
3. (Infant deaths / Live births) x 1000
4. Number of existing cases / Total population
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-3, R-4, S-1
(C) P-2, Q-4, R-1, S-3
(D) P-3, Q-1, R-4, S-2

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173. Read the following statements and select the correct option.
Statement I: Reproductive Tract Infections (RTIs) can only be transmitted through sexual contact.
Statement II: Sexually Transmitted Infections (STIs) are a subset of RTIs.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

174. A correct pair of concept and description is:
(A) Reproductive Health: A holistic approach including well-being, rights, and services.
(B) Morbidity: The statistical study of recorded deaths in a defined population.
(C) Incidence: The total number of all existing disease cases at a specific time.
(D) Life Table: A mathematical tool used to calculate national crude birth rates.

175. Consider the following statements regarding mortality differentials in India:
1. Mortality rates are significantly lower in urban areas compared to rural areas.
2. Female child mortality is often higher than male child mortality in some parts of the country.
3. States with higher socio-economic development generally have lower mortality rates.
4. There are no mortality differentials by socio-economic characteristics like wealth.

Which of the above statements are correct?
(A) 1 and 4 only
(B) 2 and 3 only
(C) 1, 2, and 3 only
(D) 2, 3, and 4 only

176. What is the primary reason why the Maternal Mortality Rate (MMR) is expressed per 100,000

live births, while the Infant Mortality Rate (IMR) is expressed per 1,000 live births?
(A) Maternal deaths are far more common than infant deaths.
(B) Maternal deaths are relatively rare events, so a larger denominator base is used to yield a whole number.
(C) It is a statistical convention with no logical basis.
(D) Live birth data is more accurate when multiplied by 100,000.

177. The 'global leading causes of death' refers to:
(A) The diseases and injuries that cause the highest number of deaths worldwide.
(B) The diseases that are most newsworthy.
(C) The causes of death that are common in every single country.
(D) The diseases for which cures have not yet been found.

178. The concept of "ageing and burden of diseases" implies that as a population's average age increases:
(A) The burden of infectious diseases rises sharply.
(B) The prevalence and impact of chronic and degenerative diseases are likely to increase.
(C) The overall burden of disease decreases.
(D) The need for pediatric health services increases.

179. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): The definitions of live birth, fetal death, and still birth are crucial for the accurate calculation of mortality indicators like IMR.
Reason (R): Misclassification of a live birth that dies quickly as a still birth will artificially lower the measured Infant Mortality Rate.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

180. The need for the study of burden of disease arises from a need to:
(A) Create a comprehensive and comparable assessment of the impact of mortality and disability.
(B) Focus all available national health resources exclusively on diseases that cause death.
(C) Increase the budget for medical hospitals regardless of measured health outcomes.
(D) Justify the use of traditional medicine over modern evidence-based medical science.

181. A country has a population of 10 million, 200,000 live births, and 2,000 infant deaths. What is the calculated Infant Mortality Rate (IMR)?
(A) 20
(B) 100
(C) 10
(D) 200

182. Consider the following components:
1. Legal status of abortion
2. Access to safe abortion services
3. Post-abortion care
4. Ethical debates on personhood
5. Sex-selective abortion
Which of the above are considered "Abortion related issues" within the context of reproductive health studies?
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2 and 3 only
(D) 1, 2, 3, 4 and 5

183. The main distinction between a complete life table and an abridged life table is:
(A) The width of the age intervals.
(B) The source of the mortality data used.
(C) The geographic region they apply to.
(D) The inclusion or exclusion of migration.

184. In the context of child survival, an example of an exogenous cause of death is:
(A) Congenital heart defect
(B) Prematurity
(C) Genetic disorder
(D) Tetanus infection

185. Arrange the following events related to the evolution of health concepts chronologically.
1. Emphasis on Maternal and Child Health

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(MCH).
2. Broad-based introduction of a comprehensive Reproductive Health framework (e.g., ICPD).
3. Focus on vertical programs for family planning and population control.

Choose the correct sequence from the following:
(A) 1, 3, 2
(B) 3, 1, 2
(C) 2, 1, 3
(D) 1, 2, 3

186. The concept of 'disability free life expectancy' adds a dimension of _____ to the traditional measure of life expectancy.
(A) Quality of life
(B) Wealth
(C) Education
(D) Fertility

187. Which of these mortality indicators is most sensitive to the quality of maternal and child health services?
(A) Infant Mortality Rate (IMR)
(B) Crude Death Rate (CDR)
(C) Age-Specific Death Rate for ages 65+
(D) Standardized Mortality Ratio (SMR)

188. Match the items in List I with those in List II and select the correct option.
List I: (Measure of Morbidity/Mortality)
P. Incidence
Q. Prevalence
R. Case-Fatality Ratio
S. Life Expectancy
List II: (Type of Information Provided)
1. Snapshot of existing disease burden
2. Lethality of a disease
3. Flow of new disease cases
4. Summary of current mortality conditions
(A) P-3, Q-1, R-2, S-4
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-2, R-1, S-4
(D) P-4, Q-1, R-2, S-3

189. Read the following statements and select the correct option.
Statement I: The study of mortality differentials by socio-economic characteristics reveals inequalities in health outcomes within a population.
Statement II: Public health interventions can be better targeted by understanding which socio-economic groups have higher mortality.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

190. Which of the following is a direct consequence of the ageing of a population on its disease burden?
(A) An increase in the proportion of the disease burden attributable to non-communicable diseases.
(B) A decrease in the overall need for healthcare services.
(C) A resurgence of childhood infectious diseases.
(D) A shortening of the average life expectancy.

191. Consider the following statements about mortality estimation:
1. Direct methods use data directly from vital registration systems or surveys on recent deaths.
2. Indirect methods use information from sources like census questions on children ever born and children surviving.
3. Indirect methods are necessary when direct data is incomplete or unreliable.
4. Direct methods are generally considered less accurate than indirect methods if the data source is robust.

Which of the above statements are correct?
(A) 1 and 4 only
(B) 2 and 3 only
(C) 1, 2, and 3 only
(D) 2, 3, and 4 only

192. What is the denominator for the Post-Natal (or Post Neo-natal) Mortality Rate?
(A) Total mid-year population.
(B) Number of infants surviving the neonatal period.
(C) Total number of neonatal deaths.
(D) Total live births in the year.

193. The primary benefit of using age-standardized mortality rates is to:
(A) Estimate the total number of deaths in a country.

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(B) Age-specific death rates are universally higher at all ages in developing regions.
(C) Life expectancy at birth is generally higher in developed regions.
(D) The leading causes of death are identical in both developed and developing regions.

144. In the Mosley-Chen framework, parental education is considered a:
(A) Proximate determinant
(B) Socio-economic determinant
(C) Biological outcome
(D) Morbidity indicator

145. Match the items in List I with those in List II and select the correct option.
List I: (Abbreviation)
P. MMR
Q. IMR
R. ASDR
S. CDR
List II: (Full Form/Concept)
1. Deaths per 1000 population in a specific age group.
2. Deaths of infants under one year per 1000 live births.
3. Deaths per 1000 population.
4. Maternal deaths per 100,000 live births.
(A) P-4, Q-2, R-1, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-1, R-2, S-3
(D) P-3, Q-2, R-1, S-4

146. Read the following statements and select the correct option.
Statement I: The study of the burden of disease helps in understanding the comparative impact of different health problems.
Statement II: Burden of disease is measured only by counting the number of deaths.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

147. An incorrect statement regarding life tables is:
(A) They are used to calculate life expectancy.
(B) They are based on observed age-specific death rates.
(C) They assume a high rate of in-migration and out-migration.
(D) They have applications in public health and insurance.

148. Consider the following:
1. Safe abortion services
2. Management of complications of abortion
3. Freedom to decide on the number of children
4. Access to contraception information
Which of the above are encompassed within the broad modern concept of 'Reproductive Health and Rights'?
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2, and 4 only
(D) 1, 2, 3, and 4

149. The 'need and importance of the study of mortality for policy and public interventions' stems from the fact that:
(A) Mortality rates are the only valid measure of a population's health.
(B) Mortality data helps identify vulnerable groups and priority areas for health programs.
(C) High mortality is always beneficial for a country's economy.
(D) Mortality data is easy and inexpensive to collect.

150. What is a key reason for the mortality decline seen in developing countries during the 20th century?
(A) A rapid increase in per capita income to levels seen in the West.
(B) The diffusion of low-cost public health technologies like vaccines and antibiotics.
(C) The widespread adoption of traditional medicine.
(D) A global trend of decreasing fertility.

151. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): HIV/AIDS is considered a major reproductive health issue.
Reason (R): HIV is a Sexually Transmitted Infection (STI) and can also be transmitted from mother to child.

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(A) Socioeconomic determinants with proximate determinants.
(B) Mortality rates with fertility rates.
(C) Incidence rates with prevalence rates.
(D) Direct mortality measures with indirect estimation techniques.

203. Match the items in List I with those in List II and select the correct option.
List I: (Life Table Function)
P. lx
Q. dx
R. qx
S. ex
List II: (Interpretation)
1. Probability of dying in the age interval
2. Average remaining lifetime
3. Number of survivors at the beginning of the age interval
4. Number of deaths within the age interval
(A) P-4, Q-3, R-1, S-2
(B) P-3, Q-4, R-2, S-1
(C) P-3, Q-4, R-1, S-2
(D) P-4, Q-3, R-2, S-1

204. Read the following statements and select the correct option.
Statement I: The Crude Death Rate of a developed country with an old population might be higher than that of a developing country with a young population.
Statement II: This is because the overall mortality risk is higher in the developed country.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

205. Which of the following is an incorrect statement regarding the epidemiological transition?
(A) It involves a shift in the leading causes of death from infectious to chronic diseases.
(B) It is closely linked to socioeconomic development and modernization.
(C) All countries and regions pass through the transition at the same speed.
(D) Population aging is a factor that contributes to the later stages of the transition.

206. Consider the following statements:
1. Pregnancy wastage includes events like still births and miscarriages.
2. Late neo-natal death occurs between 7 and 28 days of life.
3. Child death is defined as death before the age of 1 year.
4. A fetal death is the same as an early neo-natal death.
Which of the above statements are correct?
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2, and 4 only
(D) 1, 2, 3, and 4

207. The main purpose of calculating 'disability-free life expectancy' is to:
(A) Calculate the total financial cost of disability in a country.
(B) Determine the prevalence of specific disabilities.
(C) Predict the total life expectancy of a population.
(D) Measure the average number of years a person can expect to live in good health.

208. In demographic terms, the death of a child at age 3 would be classified as:
(A) Child death
(B) Infant death
(C) Neo-natal death
(D) Post neo-natal death

209. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): The quality of mortality data in many developing countries is poor.
Reason (R): This is often due to incomplete coverage of the civil registration system, leading to under-reporting of deaths.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

210. The denominator used in the calculation of age-specific death rate for the age group 20-24 is:
(A) The mid-year population aged 20-24.

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(B) Calculate the life expectancy at birth.
(C) Determine the most common cause of death.
(D) Facilitate valid comparisons of mortality risk between populations with different age distributions.

194. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): In India, there are significant regional variations in the burden of disease.
Reason (R): The states in India are at different stages of demographic and epidemiological transition, and have varying levels of socioeconomic development and health system performance.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

195. The concept of "Reproductive Rights" is fundamentally based on the principle of:
(A) human rights and individual autonomy in reproductive decision-making.
(B) Government control over family size.
(C) The superiority of one form of family over another.
(D) The mandatory use of contraception for all adults.

196. The difference between the Crude Death Rate (CDR) and the Age-Specific Death Rate (ASDR) is that:
(A) CDR considers the whole population, while ASDR focuses on a specific age group.
(B) CDR measures morbidity, while ASDR measures mortality.
(C) CDR is an indirect measure, while ASDR is a direct measure.
(D) CDR is used in developed countries, while ASDR is used in developing countries.

197. Consider the following statements related to morbidity and health:
1. Morbidity is the state of being deceased.
2. Incidence measures the rate of new cases of a disease.
3. Prevalence measures the proportion of existing cases of a disease.
4. The case-fatality ratio measures the severity of a disease in terms of mortality risk.
5. Health is defined as the mere absence of morbidity.

Which of the above statements are correct?
(A) 1, 2 and 3 only
(B) 2, 3 and 4 only
(C) 3, 4 and 5 only
(D) 1, 2 and 5 only

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198. The most comprehensive measure of a population's health status that combines both mortality and morbidity is:
(A) Crude Death Rate
(B) Life Expectancy at Birth
(C) Burden of Disease (e.g., DALYs)
(D) Infant Mortality Rate

199. A life table constructed using the mortality rates of a single year for a population is called a:
(A) Cohort life table
(B) Period or current life table
(C) Model life table
(D) Abridged life table

200. Which of the following is a key reason for the persistence of high infant and child mortality in parts of India?
(A) Low fertility rates
(B) Malnutrition, poor sanitation, and inadequate access to quality healthcare
(C) High levels of maternal education
(D) An aging population structure

201. Which of the following is the best definition for Neo-natal mortality rate?
(A) Number of deaths of infants under 7 days of age per 1,000 live births in a given year.
(B) Number of still births per 1,000 total births in a given year.
(C) Number of deaths of infants under 28 days of age per 1,000 live births in a given year.
(D) Number of deaths of infants under 1 year of age per 1,000 live births in a given year.

202. The Mosley and Chen framework for child survival is an analytical tool that connects:

specific death rates of the study population are not available or are unreliable.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

220. An 'incorrect' statement about Reproductive Health is:
(A) It evolved from a narrow focus on family planning.
(B) It includes attention to adolescent reproductive morbidity.
(C) It is synonymous with maternal health only.
(D) It addresses issues like STIs and HIV/AIDS.

221. Consider the following:
1. Improving sanitation and hygiene
2. Discovery of antibiotics
3. Increased female literacy
4. Development of vaccines
Which of the above are considered major reasons for mortality decline in developing countries?
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2 and 4 only
(D) 1, 2, 3 and 4

222. The term "causes of death statistics" refers to:
(A) The total number of deaths in a country.
(B) The classification of deaths by the underlying disease or injury that caused them.
(C) The calculation of life expectancy.
(D) The study of morbidity patterns.

223. What is the key advantage of using disability-free life expectancy (DFLE) over standard life expectancy (LE)?
(A) DFLE is easier to calculate.
(B) DFLE provides information on the quality of life, not just its length.
(C) DFLE is not affected by mortality data.
(D) DFLE only applies to developed countries.

224. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): Model Life Tables are an essential tool in demography, especially for countries with poor data.
Reason (R): They provide a set of standardized mortality patterns that allow demographers to estimate a complete life table from limited information, such as an estimate of child mortality.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

225. A public health official wants to measure the risk of developing a new disease over a one-year period. The most appropriate measure to use would be:
(A) Prevalence
(B) Case-fatality ratio
(C) Incidence rate
(D) Crude death rate

226. Which of the following is NOT a measure of morbidity?
(A) Incidence rate
(B) Prevalence rate
(C) Case-fatality ratio
(D) Age-Specific Death Rate

227. Consider the following elements of reproductive health:
1. Emergency obstetric care
2. Management of RTIs/STIs
3. Adolescent reproductive morbidity issues
4. Abortion related issues
5. Reproductive rights and ethics
Which of the above are considered part of a comprehensive study of reproductive health?
(A) 1 and 2 only
(B) 1, 3 and 5 only
(C) 2, 3 and 4 only
(D) 1, 2, 3, 4 and 5

228. The shift from a high mortality/high morbidity profile to a low mortality/low morbidity profile, with a change in causes from infectious to chronic, is broadly termed:
(A) The Health Transition
(B) The Demographic Dividend
(C) Natural Increase

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reach their fifth birthday. Which indicator would be most appropriate for this purpose?
(A) Under-five Mortality Rate
(B) Infant Mortality Rate
(C) Neo-natal Mortality Rate
(D) Age-Specific Death Rate (ASDR) for ages 1-4

Direction : Please read the following source carefully.

Infant and child mortality are significant indicators of a nation's health and socio-economic development, with levels and determinants in countries like India receiving substantial analytical focus. The causes of infant mortality are broadly categorized as endogenous and exogenous. Endogenous causes, also known as biological or congenital factors, are linked to the conditions of pregnancy and birth, including congenital malformations, prematurity, and birth injuries. These factors are predominant in the neonatal period. Exogenous causes, or environmental factors, are related to conditions external to the infant after birth, such as infections, parasites, accidents, and nutritional deficiencies. These become more influential during the post-neonatal period. To provide a comprehensive understanding of the multifaceted determinants of child health, the Mosley and Chen's Framework for Child Survival was developed. This analytical framework integrates social, economic, and cultural determinants (background variables) with a set of proximate determinants (intermediate variables) that directly influence the risk of morbidity and mortality. These proximate determinants include maternal factors, environmental contamination, nutrient deficiency, injury, and personal illness control, bridging the gap between socioeconomic factors and child survival outcomes.

Based on the above source, attempt the following five questions.

261. According to the text, which category of causes is most dominant during the neonatal period of infancy?
(A) Exogenous causes
(B) Environmental factors
(C) Socio-economic determinants
(D) Endogenous causes

262. A child's death due to a respiratory infection contracted from poor household sanitation would be classified as resulting from:
(A) an endogenous cause.
(B) an exogenous cause.
(C) a congenital malformation.
(D) a perinatal condition.

263. What is the central purpose of the Mosley and Chen's Framework for Child Survival?
(A) To exclusively categorize the biological causes of infant death
(B) To measure the global levels of infant mortality
(C) To provide a model that links socioeconomic factors with direct health-influencing variables
(D) To focus solely on the role of nutrition in child survival

264. Within the Mosley and Chen's Framework, factors such as environmental contamination and nutrient deficiency are referred to as:
(A) background variables.
(B) congenital determinants.
(C) final health outcomes.
(D) proximate determinants.

265. Based on the paragraph, which of the following is an example of an endogenous cause of infant mortality?
(A) Prematurity at birth
(B) Accidental injury
(C) Parasitic infection
(D) Nutritional deficiency

Direction : Please read the following source carefully.

The study of mortality is fundamentally dependent on the availability and quality of mortality data, which is crucial for shaping effective policy and public health interventions. Sources for such data include vital registration systems, population censuses, and sample surveys. Assessing the quality of this data is paramount, as under-reporting of deaths can significantly skew mortality measures. Each measure, from the Crude Death Rate to the Infant Mortality Rate, has relative merits and demerits; for instance, while IMR is a sensitive indicator of public health, its accuracy relies on complete registration of both

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(B) The hypothetical starting population, usually 100,000.
(C) The probability of death in the first year of life.
(D) The final age to which anyone in the cohort survives.

238. An example of a mortality differential by a socio-economic characteristic would be:
(A) Higher infant mortality rates among children born to mothers with no education compared to those with higher education.
(B) Higher death rates in older age groups compared to younger age groups.
(C) Different death rates for males and females.
(D) Different death rates in different calendar years.

239. Consider the following statements regarding mortality data:
1. The quality of mortality data depends on the completeness of the vital registration system.
2. The CDR is a poor measure for comparing countries with different age structures.
3. Indirect estimation methods are a substitute for improving vital registration systems.
4. The IMR is a sensitive indicator of health and development.
5. ASDRs are less data-intensive to calculate than the CDR.

Which of the above statements are correct?
(A) 1, 2 and 4 only
(B) 2, 3 and 5 only
(C) 1, 3 and 4 only
(D) 1, 2, 4 and 5

240. The evolution of the concept of reproductive health was significantly influenced by:
(A) The development of new antibiotics.
(B) The international women's health and rights movements.
(C) The discovery of DNA.
(D) The global decline in fertility rates.

241. The leading causes of death in a country at the final stage of epidemiological transition are most likely to be:
(A) Chronic, non-communicable diseases like heart disease, cancer, and diabetes.
(B) Pandemics of infection like plague and cholera.
(C) Infectious diseases like tuberculosis and diarrhea.
(D) Famine and malnutrition.

242. Arrange the following time periods related to infant mortality in chronological order from birth.
1. Post-neonatal period
2. Early neonatal period
3. Late neonatal period

Choose the correct sequence from the following:
(A) 1, 2, 3
(B) 2, 3, 1
(C) 3, 2, 1
(D) 2, 1, 3

243. The primary difference between mortality and morbidity is that:
(A) Mortality refers to death, while morbidity refers to illness or disease.
(B) Mortality is easier to measure than morbidity.
(C) Mortality is measured by CDR, while morbidity is measured by IMR.
(D) Mortality applies to old people, while morbidity applies to young people.

244. If you want to compare the overall mortality level of two countries while removing the confounding effect of age, the best indicator to use would be:
(A) The Crude Death Rate for each country.
(B) The total number of deaths in each country.
(C) The Age-Standardized Death Rate for each country.
(D) The Infant Mortality Rate for each country.

245. Match the items in List I with those in List II and select the correct option.
List I: (Concept)
P. Standardized classification of diseases
Q. Analysis of child survival determinants
R. Estimation of mortality with poor data
S. Measuring mortality and disability together
List II: (Associated Framework/Tool)
1. Mosley and Chen's Framework
2. Burden of Disease (DALY)
3. International Classification of Diseases (ICD)
4. Model Life Tables

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(A) P-3, Q-1, R-4, S-2
(B) P-1, Q-3, R-4, S-2
(C) P-3, Q-2, R-1, S-4
(D) P-2, Q-1, R-4, S-3

246. Read the following statements and select the correct option.
Statement I: Life expectancy at birth is a summary measure of the mortality conditions in a population at a given time.
Statement II: An increase in life expectancy at birth directly reflects a decrease in the prevalence of chronic diseases.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

247. A "correct pair" from the following is:
(A) Maternal Mortality - Death of a woman due to complications of childbirth.
(B) Still Birth - Death of an infant at age 10 days.
(C) Incidence Rate - Number of all existing cases of a disease.
(D) CDR - A mortality measure unaffected by age structure.

248. Consider the following mortality indicators:
1. Crude Death Rate
2. Age-Specific Death Rate
3. Infant Mortality Rate
4. Maternal Mortality Rate

Which of these are age- or group-specific, and not measures of the entire population at once?
(A) 1 only
(B) 1 and 2 only
(C) 2, 3, and 4 only
(D) 1, 2, 3, and 4

249. The need for Model Life Tables arises from:
(A) The absence of reliable and complete age-specific mortality data in many populations.
(B) The need to have a single, universal life table for all countries.
(C) The requirement to only use models in demography, not empirical data.
(D) The need to calculate birth rates.

250. The study of the current scenario of burden of disease in India is important at which administrative level?
(A) By States/UTs
(B) Only at the National level
(C) Only for metropolitan cities
(D) Only for rural areas

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Direction : Please read the following source carefully.

The study of mortality involves an understanding of basic concepts and specific definitions related to the termination of life and pregnancy outcomes. Pregnancy wastage is a critical component, encompassing events like miscarriage, which is the spontaneous loss of a fetus before it is viable, and abortion, the induced termination of a pregnancy. It also includes fetal death, which is death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy. A stillbirth is a specific type of fetal death occurring after a certain gestational age, typically 20 to 28 weeks. In contrast, a live birth is defined as the complete expulsion or extraction of a product of conception from its mother which, after such separation, breathes or shows any other evidence of life. Following a live birth, mortality is further categorized by age. Early neo-natal death occurs in the first week of life, late neo-natal death from the 7th to the 28th day, and post neo-natal death from 28 days up to one year. An infant death is any death occurring within the first year of life, while a child death typically refers to mortality between the ages of one and five years.

Based on the above source, attempt the following five questions.

251. Which of the following terms describes the induced termination of a pregnancy?
(A) Miscarriage
(B) Abortion
(C) Fetal death
(D) Stillbirth

252. According to the provided definitions, what is the key criterion that distinguishes a live birth from a fetal death?
(A) The presence of any sign of life after expulsion
(B) The duration of the pregnancy
(C) The weight of the fetus at birth
(D) The cause of the termination of pregnancy

253. A death occurring at 15 days after a live birth would be classified as which of the following?
(A) Early neo-natal death
(B) Post neo-natal death
(C) Late neo-natal death
(D) Child death

254. The concept of 'pregnancy wastage' as described in the paragraph primarily encompasses which of the following sets of events?
(A) Infant death, child death, and live birth
(B) Early neo-natal death and late neo-natal death
(C) Live birth, stillbirth, and post neo-natal death
(D) Miscarriage, abortion, fetal death, and stillbirth

255. Based on the text, what is the temporal boundary that defines an infant death?
(A) Death occurring within the first week of life
(B) Death occurring between the 7th and 28th day of life
(C) Death occurring within the first year of life
(D) Death occurring between the first and fifth year of life

Direction : Please read the following source carefully.

To quantify and compare mortality levels across different populations and time periods, demographers and public health officials rely on a set of standardized mortality indicators. The Crude Death Rate (CDR) is the most basic measure, representing the total number of deaths in a population during a specified period per 1,000 people. However, its utility is limited as it does not account for the age structure of the population. A more refined measure is the Age-Specific Death Rate (ASDR), which calculates the number of deaths for a specific age group per 1,000 individuals in that same age group. For measuring early-life mortality, the Infant Mortality Rate (IMR) is a crucial indicator, defined as the number of deaths of infants under one year of age per 1,000 live births. IMR can be further disaggregated into the Neo-natal Mortality Rate (deaths in the first 28 days) and the Post-natal Mortality Rate (deaths from 28 days to one year). The Under-five Mortality Rate provides a broader view of child well-being, while the Maternal Mortality Rate (MMR) is a distinct indicator measuring the risk of death among women due to pregnancy-related causes per 100,000 live births.

Based on the above source, attempt the following five questions.

256. Why is the Crude Death Rate (CDR) considered a limited measure for comparing mortality between different populations?
(A) It only measures deaths in a specific age group.
(B) It does not consider the population's age composition.
(C) It is calculated per 100,000 people instead of 1,000.
(D) It excludes infant and maternal deaths from its calculation.

257. Which mortality indicator specifically measures the risk of death for infants between 28 days and one year of age?
(A) Neo-natal Mortality Rate
(B) Infant Mortality Rate
(C) Under-five Mortality Rate
(D) Post-natal Mortality Rate

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258. The Age-Specific Death Rate (ASDR) improves upon the Crude Death Rate (CDR) by:
(A) calculating mortality for specific age categories within a population.
(B) including morbidity data in its calculation.
(C) focusing only on deaths related to pregnancy.
(D) using a denominator of 100,000 live births for greater precision.

259. What is the primary difference in the denominator used for calculating the Infant Mortality Rate (IMR) versus the Maternal Mortality Rate (MMR) as described in the text?
(A) IMR uses total population, while MMR uses female population.
(B) IMR uses a mid-year population estimate, while MMR uses total births.
(C) IMR is per 1,000 live births, while MMR is per 100,000 live births.
(D) IMR is per 1,000 total births, while MMR is per 100,000 pregnancies.

260. A public health analyst wants to measure the overall mortality risk for children before they

(D) The Mortality Stall

229. If a disease has a high incidence but a low prevalence, this implies that the disease has a:
(A) Long duration
(B) Short duration
(C) Low case-fatality ratio
(D) High case-fatality ratio

230. Match the items in List I with those in List II and select the correct option.
List I: (Demographic Term)
P. Infant Mortality Rate
Q. ICD-X
R. Burden of Disease
S. Model Life Table
List II: (Field of Study)
1. Estimation Techniques
2. Causes of Death Statistics
3. Health Status Measurement
4. Mortality Indicators
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-2, R-3, S-1
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-1, R-4, S-2

231. Read the following statements and select the correct option.
Statement I: The Infant Mortality Rate is a component of the Under-Five Mortality Rate.
Statement II: The Under-Five Mortality Rate only includes deaths between the ages of one and five.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

232. Which of the following is an example of a direct public intervention to reduce mortality?
(A) Studying historical mortality trends.
(B) Implementing a nationwide immunization program.
(C) Debating the ethics of reproductive health.
(D) Calculating the crude death rate.

233. Consider the following:
1. Pneumonia
2. Diarrheal diseases
3. Congenital abnormalities
4. Low birth weight

Which of the above can be causes of infant mortality?
(A) 3 and 4 only
(B) 1 and 2 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

234. In a population where life expectancy is increasing, what is the importance of also measuring disability-free life expectancy?
(A) To ensure that the extra years of life are healthy years, not years primarily spent in a state of sickness and disability.
(B) To calculate the crude death rate more accurately for the purpose of comparing international mortality outcomes.
(C) To determine the specific medical causes of death that are most prevalent among the elderly and disabled population.
(D) To replace the standard life expectancy measure entirely with a more modern and comprehensive demographic indicator.

235. The concept of 'emergency obstetric care' is critical for reducing:
(A) Infant mortality
(B) Child mortality
(C) Maternal mortality
(D) Overall crude death rate

236. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Examine these two statements carefully and select the correct answer using the codes given below.
Assertion (A): The measurement of morbidity is often more complex than the measurement of mortality.
Reason (R): Death is a discrete and clearly defined event, whereas morbidity can be subjective, have varying levels of severity, and may not always be reported.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

237. The 'radix' of a life table refers to:
(A) Life expectancy at birth.

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births and infant deaths. To overcome challenges in comparing mortality across populations with differing demographic profiles, particularly age structures, standardization techniques are employed. Direct standardization applies a standard population's age structure to the age-specific death rates of the populations being compared, yielding an age-adjusted death rate. This allows for a comparison of mortality that is free from the confounding effect of age. Indirect standardization is used when age-specific death rates for a study population are unavailable or unreliable. It compares the number of observed deaths in the study population to the number of expected deaths, which are calculated using the age-specific rates of a standard population.

Based on the above source, attempt the following five questions.

266. What is the primary purpose of using standardization techniques for mortality rates?
(A) To increase the absolute number of reported deaths
(B) To enable comparison between populations by removing the effect of age structure
(C) To correct for the under-reporting of vital events
(D) To calculate the crude death rate more accurately

267. A researcher is comparing mortality in a young, growing population with that of an aging population. Which of the following is the most significant issue that standardization would address?
(A) The different sources of mortality data in the two populations
(B) The confounding effect of the different age distributions
(C) The relative demerits of using Infant Mortality Rate
(D) The under-reporting of deaths in both populations

268. According to the text, when is indirect standardization a more appropriate method than direct standardization?
(A) When age-specific death rates for the study population are not available
(B) When the standard population's age structure is unknown
(C) When the crude death rates of the populations are identical
(D) When the goal is to study the merits of different mortality measures

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269. The paragraph suggests that the accuracy of the Infant Mortality Rate (IMR) is particularly sensitive to which data quality issue?
(A) The use of a standard population for adjustment
(B) The availability of age-specific death rates for the elderly
(C) The complete registration of both births and infant deaths
(D) The implementation of public health interventions

270. Direct standardization achieves a comparable mortality rate by applying which of the following?
(A) The study population's age structure to a standard population's death rates
(B) The observed deaths from a study population to the expected deaths of a standard population
(C) The crude death rate of a standard population to the study population's size
(D) A standard population's age structure to the study population's age-specific death rates

Direction : Please read the following source carefully.

A life table is a fundamental demographic tool that provides a concise summary of the mortality experience of a population. Its basic concept is to follow a hypothetical cohort of newborns and trace their attrition from death at successive ages according to a set of observed age-specific mortality rates. Life tables come in different types and forms; a key distinction is between a period (or current) life table, which is based on mortality rates from a specific, short period (e.g., one year), and a cohort (or generation) life table, which follows an actual birth cohort throughout their lives. They can also be complete, showing data by single years of age, or abridged, showing data for age intervals. In situations where empirical data is deficient or unreliable, Model Life Tables (MLT) are indispensable. The UN Model Life Tables, for instance, provide patterns of mortality based on extensive historical data from various

283. The modern definition of reproductive health emphasizes which of the following?
(A) The absence of disease in the reproductive system only
(B) A holistic state of physical, mental, and social well-being
(C) The primary importance of achieving population control targets
(D) The exclusion of abortion-related issues from public health policy

284. Why is adolescent reproductive morbidity highlighted as a specific area of concern?
(A) Because adolescents face unique health challenges distinct from adults
(B) Because adolescents are not covered under the definition of reproductive health
(C) Because adolescent health issues are solely related to family planning
(D) Because strategies for maternal mortality do not apply to them

285. The inclusion of abortion-related issues within the reproductive health framework is justified primarily because:
(A) it is the most effective method of family planning.
(B) it is solely a matter of social and ethical debate.
(C) unsafe abortions are a significant cause of maternal death and illness.
(D) it is unrelated to the concept of Emergency Obstetric Care.

Direction : Please read the following source carefully.

Infections of the reproductive system represent a significant public health challenge with profound implications. These are broadly categorized as Reproductive Tract Infections (RTIs) and Sexually Transmitted Infections (STIs), terms that have considerable overlap. STIs are, by definition, transmitted primarily through sexual contact, while RTIs is a broader term that also includes infections of the reproductive tract that are not sexually transmitted. These infections, if left untreated, can lead to serious consequences, including chronic pain, infertility, ectopic pregnancy, and an increased risk of other health complications. A major global concern within this domain is the Human Immunodeficiency Virus (HIV), which leads to Acquired Immunodeficiency Syndrome (AIDS). The implications of HIV/AIDS are vast, affecting not only individual health but also having deep demographic, social, and economic impacts on communities and nations. The spread of these infections raises complex reproductive rights and ethical issues, particularly concerning consent, confidentiality in testing, access to treatment, and the stigma and discrimination faced by affected individuals. Addressing RTIs, STIs, and HIV/AIDS requires a multi-pronged approach that combines prevention, screening, and treatment with efforts to protect human rights and reduce social vulnerability.

Based on the above source, attempt the following five questions.

286. What is the primary distinction between the terms Reproductive Tract Infections (RTIs) and Sexually Transmitted Infections (STIs) as described in the text?
(A) RTIs are viral, while STIs are bacterial.
(B) RTIs affect only women, while STIs affect both men and women.
(C) STIs have no long-term health implications, unlike RTIs.
(D) STIs are exclusively transmitted sexually, while the definition of RTIs is broader.

287. Which of the following is identified in the text as a potential long-term consequence of untreated RTIs/STIs?
(A) Improved immune response
(B) Reduced risk of other infections
(C) Infertility
(D) Decreased social stigma

288. The paragraph highlights that the implications of HIV/AIDS extend beyond individual health to include which other domains?
(A) Exclusively political and legislative domains
(B) Demographic, social, and economic domains
(C) Geological and environmental domains
(D) Only the domains of reproductive rights and ethics

289. The discussion of reproductive rights and ethical issues in the context of STIs/HIV most directly relates to which of the following?

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(A) Incidence
(B) Prevalence
(C) Case-fatality ratio
(D) Morbidity burden

277. What is the key distinction between incidence and prevalence?
(A) Incidence measures disease severity, while prevalence measures disease risk.
(B) Incidence measures chronic diseases, while prevalence measures infectious diseases.
(C) Incidence is derived from hospital records, while prevalence is from health surveys.
(D) Incidence counts only new cases over a period, while prevalence counts all existing cases.

278. If a disease has a high incidence but low prevalence, what can be inferred about the disease?
(A) The disease is chronic and long-lasting.
(B) The disease has a short duration (i.e., people recover quickly or die).
(C) The disease is highly severe and has no cure.
(D) The disease affects a very small proportion of the population.

279. The epidemiological transition, as described in the text, is characterized by a societal shift from:
(A) high morbidity to low morbidity.
(B) a dominance of chronic diseases to a dominance of infectious diseases.
(C) a dominance of infectious diseases to a dominance of non-communicable diseases.
(D) high prevalence to high incidence of all diseases.

280. To determine the severity of a sudden outbreak of a new virus, public health officials would be most interested in calculating which indicator?
(A) The point prevalence
(B) The period prevalence
(C) The incidence rate
(D) The case-fatality ratio

Direction : Please read the following source carefully.

Reproductive health is a comprehensive concept that has evolved significantly over time. It is defined not just as the absence of disease or infirmity in matters relating to the reproductive system, but as a state of complete physical, mental, and social well-being. The rationale for this broad approach is to address the full spectrum of needs throughout the life cycle. Initially, ideas were narrowly focused on family planning, but they have evolved to encompass a wide range of issues including maternal health, adolescent reproductive health, and reproductive rights. Maternal morbidity, or illness and disability related to pregnancy and childbirth, is a major concern. A key strategy to combat this is ensuring access to Emergency Obstetric Care (EmOC) for all women experiencing complications. Adolescent reproductive morbidity is another critical area, as young people face unique health challenges. In India, strategies to reduce maternal morbidity and mortality are multifaceted, addressing everything from skilled birth attendance to safe abortion services. Abortion-related issues are an integral part of the reproductive health agenda, as unsafe abortions contribute significantly to maternal deaths and morbidity. The modern approach emphasizes a rights-based framework, ensuring individuals can make free and informed decisions about their reproductive lives.

Based on the above source, attempt the following five questions.

281. How has the concept of reproductive health evolved over time?
(A) From a narrow focus on family planning to a comprehensive well-being and rights-based approach
(B) From a focus on social well-being to a focus on physical disease
(C) From a broad life-cycle approach to a narrow focus on childbirth
(D) From a focus on maternal health to an exclusive focus on adolescent health

282. According to the text, what is a key strategy for reducing maternal morbidity?
(A) Limiting access to family planning services
(B) Ensuring access to Emergency Obstetric Care (EmOC)
(C) Focusing solely on adolescent reproductive health
(D) Discouraging hospital births in favor of traditional methods

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countries. The construction of a period life table is typically based on Age-Specific Death Rates (ASDRs). A critical underlying assumption is that the hypothetical cohort is a closed population subject only to mortality, and that it experiences the ASDRs observed in the real population during the specified period. Life tables are widely used in demographic analysis for applications such as calculating life expectancy and survival probabilities.

Based on the above source, attempt the following five questions.

271. What is the primary underlying assumption when constructing a period life table from a community's ASDRs?
(A) The community's mortality rates will decrease in the future.
(B) The community is an open population with significant migration.
(C) The hypothetical cohort experiences the observed mortality rates of a specific period.
(D) The life table must be constructed using data from a real birth cohort over 100 years.

272. Which type of life table would be constructed by tracking the mortality experience of all individuals born in the year 1950 until all have died?
(A) A period life table
(B) A cohort life table
(C) An abridged life table
(D) A model life table

273. Under what circumstances are Model Life Tables (MLT) particularly necessary?
(A) When calculating life expectancy for a current year
(B) When comparing mortality between two countries with excellent data
(C) When constructing a complete life table by single years of age
(D) When empirical mortality data for a population is lacking or of poor quality

274. A life table that presents mortality data in five-year age intervals (e.g., 0-4, 5-9, 10-14) is best described as:
(A) an abridged life table.
(B) a complete life table.
(C) a cohort life table.
(D) a UN Model Life Table.

275. The core function of a life table, as described in the paragraph, is to:
(A) record the cause of every death in a population.
(B) predict future population growth accurately.
(C) summarize the mortality pattern of a population.
(D) analyze the impact of migration on population structure.

Direction : Please read the following source carefully.

The concepts of health and morbidity are central to public health, where health is defined not merely as the absence of disease but as a state of complete well-being. Morbidity refers to any departure from a state of physiological or psychological well-being; in essence, it is the state of being diseased or unhealthy. Data on morbidity is gathered from various sources, including hospital records, disease registries, and population-based health surveys. To quantify morbidity, several key indicators are used. Incidence measures the rate of new cases of a disease occurring in a population over a specific period, reflecting the risk of contracting the disease. Prevalence, on the other hand, measures the total number of existing cases (both new and old) of a disease in a population at a particular point in time or over a period, reflecting the overall burden of the disease. The Case-fatality ratio is another important measure, quantifying the proportion of individuals with a particular disease who die from it, thereby indicating its severity. These measures are crucial for tracking the epidemiological transition, which describes the long-term shift in mortality and disease patterns whereby populations experience a decline in infectious diseases and a rise in chronic, non-communicable diseases. This transition is observed globally, though at different paces in developed and developing countries, with India exhibiting a complex pattern.

Based on the above source, attempt the following five questions.

276. A health department reports 200 new cases of influenza in a city of 100,000 people during the month of January. This report is a measure of the disease's:

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(A) The cost of developing new antibiotic medications
(B) The classification of viruses versus bacteria
(C) The history of global pandemics
(D) The confidentiality of testing and stigma against patients

290. Based on the passage, a comprehensive approach to managing RTIs, STIs, and HIV/AIDS must integrate medical interventions with what other crucial element?
(A) The protection of human rights
(B) The development of economic sanctions
(C) The promotion of demographic transition
(D) The classification of all diseases

Direction : Please read the following source carefully.

Understanding the causes of death is fundamental to public health surveillance and planning. Causes of death statistics are compiled from sources such as civil registration systems that record death certificates, with supplementary information sometimes gathered through methods like verbal autopsies in areas where medical certification is rare. For consistency in classifying and reporting mortality data globally, the International Classification of Diseases (ICD) is used. The tenth revision, ICD-10, introduced in 1990, serves as the standard diagnostic tool for epidemiology and health management. It provides a systematic format for coding diseases, signs, symptoms, and external causes of injury or disease. By analyzing these statistics, health authorities can identify global leading causes of death and monitor trends, with a special reference to specific regions like Asia and India. The distribution of deaths by main causes is not uniform across a population; it varies significantly by age. For example, infectious diseases may be more prominent causes of death in children, while chronic diseases dominate in older age groups. This distribution of cause-specific mortality has a direct impact on a population's overall life expectancy, as premature deaths from certain causes can substantially lower the average lifespan.

Based on the above source, attempt the following five questions.

291. What is the primary function of the International Classification of Diseases (ICD-10)?
(A) To provide treatment protocols for all known diseases
(B) To estimate the total number of deaths in a country
(C) To offer a standardized system for classifying and coding causes of death
(D) To fund public health programs in developing nations

292. According to the text, how does the distribution of main causes of death typically vary within a population?
(A) It differs significantly by age.
(B) It remains constant across all age groups.
(C) It is determined solely by geographic location.
(D) It is independent of a country's level of development.

293. In a region lacking widespread medical certification of deaths, which method might be used to gather information for causes of death statistics?
(A) Population census
(B) ICD-10 coding
(C) Life table analysis
(D) Verbal autopsy

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294. The paragraph implies that a country's life expectancy can be influenced by:
(A) the number of hospitals using the ICD-10 system.
(B) the prevalence of certain causes of premature death.
(C) the total number of disease classifications available.
(D) the accuracy of birth registration systems only.

295. Why is a standardized system like the ICD important for causes of death statistics?
(A) It ensures that all deaths are medically certified by a professional.
(B) It replaces the need for sources like civil registration systems.
(C) It allows for consistent and comparable reporting of mortality data across different regions.
(D) It focuses exclusively on the leading causes of death in Asia and India.

9. (A) Both A and R are true and R is the correct explanation of A.
Mortality statistics serve as vital indicators for public health assessment and social policy development. Metrics such as the infant mortality rate and maternal mortality rate provide significant insights into the overall health status of a nation. These figures reflect the quality of medical care, nutritional levels, and socioeconomic progress. High rates often highlight systemic gaps, necessitating targeted governmental interventions and resource allocation to improve living conditions.

10. (A) (Number of deaths of infants under 1 year / Total number of live births in the same year) x 1000
The infant mortality rate is a fundamental measure of child survival and a sensitive indicator of general living standards. It is calculated by taking the total number of deaths of infants under one year of age and dividing this figure by the total number of live births recorded in the same calendar year. This ratio is typically expressed per one thousand live births to ensure statistical comparability.

11. (D) Cause-Specific Death Rate (CSDR)
Primary mortality indicators are broad measures used to evaluate the overall health and demographic status of a population. These include metrics like the age-specific death rate, maternal mortality rate, and under-five mortality rate. While the cause-specific death rate is highly useful for epidemiological analysis, it is generally considered a secondary indicator because it focuses on individual diseases rather than providing a holistic view of mortality patterns.

12. (C) 3 and 5 only
Mortality rates use different population bases for their calculation depending on the specific group being studied. The infant mortality rate and the maternal mortality rate both utilize the total number of live births in a given year as their denominator. This distinguishes them from measures like the crude death rate, which uses the mid-year population, or age-specific rates, which focus only on individuals in specific age groups.

13. (C) 100,000 live births
The maternal mortality rate is a crucial indicator for assessing the risks associated with pregnancy and childbirth. Unlike the infant mortality rate, which is usually expressed per one thousand, this measure is conventionally reported per one hundred thousand live births. This larger scale is necessary because maternal deaths are relatively infrequent events, and using a larger denominator provides a more stable and readable whole number for analysis.

14. (D) Endogenous causes are linked to the conditions of pregnancy and birth, while exogenous causes stem from the post-birth environment.
Infant mortality is influenced by two distinct categories of causes. Endogenous causes are primarily related to biological factors, fetal development, and the circumstances surrounding birth, such as congenital malformations. In contrast, exogenous causes stem from the external environment after the child is born, including infections, nutritional deficiencies, and sanitation issues. Differentiating between these helps public health officials identify whether to focus on clinical or environmental interventions.

15. (A) 3, 4, 2, 1
Mortality in early life is categorized into distinct periods based on the timing of death. The perinatal period, which starts before birth, is the earliest phase, followed immediately by the early neonatal period within the first week. The late neonatal period covers the remainder of the first month. Finally, the postnatal period encompasses the rest of the first year of life, highlighting shifting causes of death.

16. (B) To link socio-economic determinants with proximate determinants of child health.
The framework developed by Mosley and Chen is widely used to analyze the factors affecting child survival in developing nations. It uniquely integrates social and economic determinants with biological or proximate determinants. By showing how environmental, nutritional, and medical factors directly influence health outcomes, the model provides a comprehensive understanding of how social inequalities translate into physical illness and mortality risks for children under five.

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ANSWERS

1. (B) The termination of pregnancy before the fetus is viable.
Pregnancy wastage represents the loss of a fetus before it reaches a stage of viability where it could potentially survive outside the womb. This demographic concept encompasses various types of fetal loss, including spontaneous miscarriages, induced abortions, and stillbirths. Tracking these events is vital for understanding reproductive health patterns and assessing the effectiveness of prenatal care within a population, as high levels often indicate underlying healthcare challenges.

2. (A) The first 7 days
The early neonatal period is a critical phase of life where survival is heavily influenced by factors related to the pregnancy and birth process. Death of a live-born infant occurring within the first seven days of life is classified as early neonatal death. Monitoring these specific instances provides essential data on the quality of obstetric services and the immediate health outcomes for newborns in clinical settings.

3. (A) P-2, Q-4, R-1, S-3
Mortality indicators are categorized by the timing of death relative to birth and age. Fetal deaths occurring after twenty-eight weeks of gestation are termed stillbirths. For live births, deaths between seven and twenty-eight days are late neonatal, while those between twenty-eight days and one year are post-neonatal. Collectively, any death of a live-born infant before completing their first year of life is termed an infant death.

4. (A) Both Statement I and Statement II are true.
Distinguishing between types of pregnancy termination is essential for accurate demographic reporting. A miscarriage is defined as the spontaneous or unplanned expulsion of a fetus from the uterus before it can survive independently. Conversely, an abortion refers to a procedurally induced termination of pregnancy. Both conditions represent forms of pregnancy wastage, yet they stem from different clinical circumstances and require distinct medical and public health responses.

5. (C) A live birth is defined as the birth of a child who survives for at least 24 hours.
A live birth is officially defined as the complete expulsion or extraction of a product of conception from its mother, regardless of the duration of pregnancy, which after such separation shows any evidence of life. This includes breathing, heartbeat, or movement of voluntary muscles. It does not require a minimum duration of survival, such as twenty-four hours, to be recorded as a valid live birth event.

6. (B) 1, 2, and 3 only
Pregnancy wastage is a collective term for all instances where a pregnancy does not result in a live birth. This includes miscarriages, which are spontaneous losses, and stillbirths, which involve fetal deaths occurring after a specific gestational age. Fetal death is the broader category covering these losses. Because a live birth involves a surviving infant at the time of delivery, it is excluded from this specific category.

7. (D) It does not account for the age and sex structure of the population.
The crude death rate is termed crude because it relates the total number of deaths to the total population without accounting for demographic composition. Specifically, it does not adjust for the age and sex distribution, which are major determinants of mortality risk. Populations with older age structures naturally experience higher death rates, making this measure less suitable for direct comparisons between different countries or various regions.

8. (A) Population A
Age-specific death rates measure the risk of mortality within specific age cohorts. When two populations share identical age-specific rates, their crude death rates will differ based on their underlying age structures. A population with a higher proportion of elderly individuals will necessarily record a larger total number of deaths. Consequently, even with the same risks at each age, the older population will exhibit a higher crude rate.

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Direction : Please read the following source carefully.

Beyond simple mortality rates, a comprehensive assessment of a population's health requires studying the burden of disease. This approach is needed because it accounts for not only deaths but also the impact of illness and disability on people's lives. The basic concept is to quantify the total health loss from diseases and injuries, combining years of life lost due to premature mortality with years lived with disability. Various measures have been developed for this purpose, providing a more holistic picture of public health challenges. The current scenario of the burden of disease in India reveals significant variations by states and UTs, often showing a dual burden where communicable diseases persist alongside a rising tide of non-communicable diseases. The phenomenon of population ageing is closely linked to this changing burden, as older populations tend to experience higher rates of chronic conditions. This has led to an increased focus on metrics that distinguish between the quantity and quality of life. Life expectancy, the average number of years a person is expected to live, is a standard measure of longevity. However, a more nuanced indicator is disability-free life expectancy, which estimates the average number of years a person is expected to live in a healthy state, without debilitating disability.

Based on the above source, attempt the following five questions.

296. What is the primary reason for studying the burden of disease, as stated in the paragraph?
(A) To focus exclusively on premature mortality
(B) To track the progress of life expectancy in developed nations
(C) To measure only the economic cost of healthcare
(D) To account for both death and the impact of illness and disability

297. What does the concept of "disability-free life expectancy" measure?
(A) The average number of years an individual is expected to live in a healthy state
(B) The total average lifespan of a population
(C) The probability of surviving from birth to age 65 without any illness
(D) The burden of disease caused only by physical injuries

298. The text describes the burden of disease scenario in India as a "dual burden." What does this term imply?
(A) The burden is twice as high as in other countries.
(B) Both communicable and non-communicable diseases are major, co-existing problems.
(C) Only two specific diseases are responsible for all health loss.
(D) The burden is equally distributed between urban and rural areas.

299. How is population ageing related to the burden of diseases?
(A) Ageing leads to a significant decrease in all types of diseases.
(B) Ageing is associated with a higher prevalence of chronic, non-communicable diseases.
(C) Ageing populations experience a lower life expectancy.
(D) Ageing populations only suffer from communicable diseases.

300. How does the measure of burden of disease offer a more holistic picture than standard mortality rates?
(A) By incorporating years lived with disability into its calculation
(B) By exclusively using data from states and UTs in India
(C) By focusing only on the elderly population
(D) By separating life expectancy from disability measures

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17. (B) Maternal nutritional status
In the analysis of child health, proximate determinants are biological factors that directly impact the risk of disease and death. According to the Mosley and Chen framework, maternal nutritional status is a key proximate determinant because it directly affects fetal growth and infant health. While household income and paternal education are important, they are considered distal or socioeconomic determinants that influence health indirectly through proximate variables.

18. (A) P-3, Q-1, R-2, S-4
Different mortality measures require specific population bases for accurate calculation. The crude death rate is calculated using the total mid-year population. Age-specific death rates focus on the population within a specific age range. Indicators reflecting child and maternal health, such as the infant mortality rate and maternal mortality rate, utilize the number of live births, with the latter traditionally expressed per one hundred thousand live births.

19. (A) Both Statement I and Statement II are true.
Mortality data accuracy varies significantly across global regions due to differences in administrative infrastructure. Developed nations generally maintain comprehensive vital registration systems that record every birth and death accurately. In contrast, many developing regions face challenges with incomplete registration. Consequently, demographers in these areas must frequently rely on indirect estimation methods, such as survey questions and mathematical modeling, to generate reliable health and mortality statistics.

20. (D) MMR is a robust measure that is not affected by under-reporting of births or deaths.
While the maternal mortality rate is a vital indicator of reproductive health, it is not a perfectly robust measure. It is often susceptible to significant under-reporting and misclassification of deaths, particularly in regions where vital registration systems are weak. Other indicators, like the crude death rate, are simpler but influenced by age structure, while the infant mortality rate remains a sensitive gauge for evaluating socioeconomic and medical progress.

21. (D) 1, 2, 3, and 4
The significant decline in mortality rates within developing nations is attributed to several interrelated factors. These include improved public health initiatives such as sanitation and clean water, alongside medical breakthroughs like vaccines and antibiotics. Furthermore, social developments, particularly increased female literacy and better nutritional standards, have played a critical role. Together, these elements enhance the overall health environment and increase the survival chances for populations in these regions.

22. (B) Direct data from vital registration systems is incomplete or unreliable.
Direct methods for calculating mortality rely on accurate records of births and deaths from official registries. However, when these vital registration systems are incomplete or unreliable, as is common in many developing countries, indirect estimation techniques become necessary. These methods use data from censuses or household surveys, such as the history of children surviving, to mathematically derive mortality rates that would otherwise be impossible.

23. (D) Direct or Indirect standardization of mortality rates.
Comparing mortality between populations with different age structures requires specific statistical adjustments. If one city has a significantly younger population than another, its crude death rate may appear lower simply because fewer people are in high-risk age groups. Standardization techniques, either direct or indirect, remove the influence of these age differences. This allows for a fair comparison of the underlying health and mortality conditions of the two cities.

24. (B) Both A and R are true but R is not the correct explanation of A.
Mortality patterns across India exhibit significant variations based on factors such as sex, age, and place of residence. While socioeconomic characteristics and geographic location undoubtedly influence these trends, they do not provide a complete explanation for all observed differentials. Therefore, while both statements regarding the existence of variations and the influence of residence are correct, the latter does

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41. (C) Promoting institutional deliveries and providing emergency obstetric care.
To effectively lower maternal mortality and morbidity rates in India, public health strategies focus on enhancing the safety of childbirth. A primary intervention is the promotion of institutional deliveries, where women can give birth in medical facilities under professional supervision. Additionally, ensuring that healthcare providers can offer emergency obstetric care is critical for managing complications. These combined efforts aim to provide timely and life-saving medical assistance during the birthing process.

42. (B) 3, 1, 2, 4
The global approach to population health has evolved through several distinct stages. Initially, programs focused heavily on maternal and child health. This was followed by a period where family planning and population control were the primary concerns. Later, the emphasis shifted toward a more comprehensive reproductive health approach. Most recently, the focus has integrated the concept of reproductive rights, emphasizing individual autonomy and informed choice as fundamental health components.

43. (D) STIs are a sub-category of RTIs.
In the context of reproductive health, it is important to understand the relationship between different types of infections. Reproductive tract infections are a broad category that includes any infection of the reproductive system. Sexually transmitted infections are a specific subset of these, defined by their mode of transmission through sexual contact. Therefore, while all sexually transmitted infections are considered reproductive tract infections, not every reproductive tract infection is necessarily sexually transmitted.

44. (B) Classifying diseases and other health problems for statistical and epidemiological purposes.
The International Classification of Diseases is a standardized tool maintained by the World Health Organization. Its primary purpose is to provide a uniform system for classifying and coding various diseases and health-related conditions. This standardization is essential for gathering consistent health statistics and conducting epidemiological research across different countries. It allows for the accurate tracking of disease trends and the comparison of cause-of-death data on a global scale.

45. (C) P-3, Q-1, R-4, S-2
Health and demographic concepts describe different aspects of a population's well-being. Reproductive health signifies complete well-being in all matters relating to the reproductive system. Life expectancy represents the average number of years a person is expected to live. The epidemiological transition refers to the shift from infectious to non-communicable diseases. Finally, morbidity is the term used to describe the general state of being unhealthy or diseased within a population.

46. (C) Statement I is true, but Statement II is false.
The concept of reproductive rights is built on the fundamental principle that all individuals and couples have the right to decide the number and spacing of their children freely. This includes the right to attain the highest standard of reproductive health. While access to various medical services is a component, these rights are much broader than just abortion access, as they encompass autonomy, information, and the freedom from coercion in all reproductive matters.

47. (A) HIV/AIDS is a bacterial infection that can be cured with antibiotics.
HIV/AIDS is a serious viral infection that significantly impacts reproductive health and social development. It is classified as a sexually transmitted infection and can also be passed from mother to child. Unlike bacterial infections, HIV cannot be cured with antibiotics. The management of this condition requires long-term antiretroviral therapy, and it carries profound social and economic implications for individuals and communities, making it a major focus of public health policy.

48. (C) 1, 2, and 3 only
Standardized statistics on the causes of death are essential for effective health planning and resource allocation. The International Classification of Diseases provides the necessary coding framework for this data, with the tenth revision being a major milestone. In regions where medical certification of death is absent, methods like verbal autopsy are utilized to collect this information. These statistics help

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33. (B) 1, 2, and 3 only
Evaluating the health status of a population requires specific metrics that track illness rather than just death. The incidence rate measures new cases, while the prevalence rate reflects the total burden of a disease at a given time. The case-fatality ratio indicates the severity of an illness among those infected. In contrast, the crude death rate is a mortality measure, as it focuses on the frequency of deaths.

34. (A) The prevalence of tuberculosis.
In epidemiology, the total number of existing cases of a disease within a specific population at a particular point in time is known as the prevalence. If a city of one hundred thousand people has five hundred active cases of tuberculosis on a specific date, this figure represents the prevalence of the disease. This metric is essential for healthcare planners to understand the current total burden on the medical system.

35. (C) The rate at which new cases of a disease occur in a population during a specified period.
The incidence rate is a fundamental measure used in public health to track the spread of diseases. It specifically quantifies the rate at which new cases of a particular illness occur within a defined population over a specified period. By focusing only on newly diagnosed individuals, incidence provides crucial information about the current risk of contracting the disease, helping officials evaluate the effectiveness of prevention and control measures.

36. (A) Both A and R are true and R is the correct explanation of A.
The epidemiological transition identifies a significant long-term shift in the health patterns of a population. During this process, the primary causes of death change from infectious diseases and nutritional deficiencies to chronic and degenerative conditions. This shift is driven by advancements in medical technology, improved public health infrastructure, and changes in lifestyle associated with modernization and an aging population, which leads to higher rates of non-communicable diseases.

37. (C) The proportion of individuals with a particular disease who die from that disease within a specified time.
The case-fatality ratio is a metric used to evaluate the severity or lethality of a specific disease. It is calculated by determining the proportion of individuals diagnosed with a particular condition who subsequently die from that illness within a defined timeframe. This measure differs from the mortality rate because its denominator consists only of those who have the disease, rather than the entire mid-year population.

38. (B) It focuses solely on the prevention of sexually transmitted infections.
Reproductive health is a comprehensive concept that emphasizes physical, mental, and social well-being regarding the reproductive system. Its rationale extends far beyond just preventing sexually transmitted infections, as it includes safe motherhood, family planning, and reproductive rights. This approach is particularly critical because poor reproductive health has a disproportionate impact on women in developing nations, making it an essential component of broader global health and development strategies.

39. (D) 1, 2, 3, 4, and 5
Comprehensive maternal healthcare, specifically emergency obstetric care, requires a range of essential medical services to reduce the risk of death during childbirth. This includes basic care such as antenatal and safe delivery services, as well as specialized interventions. Crucial components of this care involve the ability to provide blood transfusions and perform surgical procedures like caesarean sections to manage life-threatening complications that may arise during delivery.

40. (A) All of the above
The conceptual framework of reproductive health has expanded significantly over recent decades. It has moved beyond a narrow focus on maternal and child health to include adolescent reproductive issues and the management of sexually transmitted infections, including HIV and AIDS. Furthermore, the modern approach emphasizes the importance of reproductive rights, ensuring that individuals and couples can make informed decisions about their fertility and family planning within a supportive environment.

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not fully explain the complexities of age-sex mortality differences.

25. (C) To compare mortality rates between two or more populations by removing the effect of differences in their age structures.
Direct standardization is a demographic technique used to compare mortality levels across different populations. By applying the age-specific death rates of several populations to a single standard age structure, the confounding effects of varying age distributions are eliminated. This procedure ensures that any observed differences in standardized rates reflect genuine variations in mortality risk rather than simply reflecting the fact that one population is older than another.

26. (A) The population size remains constant from year to year.
The construction of a life table relies on several key theoretical assumptions to ensure mathematical consistency. These include the idea that the cohort is closed to migration and that mortality risks remain fixed throughout the period being studied. However, it is not assumed that the total population size remains constant over time. Instead, the focus is on how a hypothetical cohort of births gradually diminishes until the last member dies.

27. (A) 1, 2 and 3 only
Historical data shows that developing nations have typically experienced higher mortality rates compared to developed ones. However, the speed of mortality decline in these regions has often been much faster than the historical trends seen in Europe or North America. Additionally, age-specific mortality usually follows a characteristic U or J shape, where risk is highest in infancy and old age, while remaining relatively low during youth.

28. (B) The number of survivors at the exact age x.
In the terminology of a life table, the notation 'lx' is a fundamental component representing the survival experience of a hypothetical cohort. It specifically denotes the number of individuals from the original starting group, often called the radix, who are still alive at the exact age x. This value decreases as the cohort ages, providing the basis for calculating probabilities of death and further life expectancy.

29. (C) Empirical data on age-specific death rates for a population is defective or non-existent.
Model life tables are indispensable tools for demographers working in regions where empirical mortality data is either defective or completely unavailable. They consist of a collection of tables representing typical age-specific mortality patterns found in various real-world populations. By matching a few known indicators, such as child mortality, to these models, researchers can estimate a complete and reliable life table for a population with otherwise incomplete statistics.

30. (B) P-2, Q-3, R-4, S-1
Life tables use standardized symbols to represent various demographic functions. The probability of dying within a specific age interval is denoted by 'nqx', while 'Lx' represents the total person-years lived during that same period. The expectation of life at a given age is shown as 'ex'. Finally, 'dx' indicates the actual number of deaths occurring among the cohort members as they pass through that specific age range.

31. (C) Statement I is true, but Statement II is false.
Morbidity is a demographic and health term used to describe the state of being diseased, injured, or unhealthy within a population. It focuses on the prevalence and incidence of illness rather than death. While the first statement is true, the second is false because health is officially defined as more than just the absence of disease; it is a state of complete physical, mental, and social well-being.

32. (B) Vital registration systems are the primary source for morbidity data.
Morbidity data is collected through various channels, including hospital admission records, disease surveillance systems, and population-based health surveys. Unlike mortality data, which is primarily derived from vital registration systems that record deaths, morbidity information is rarely captured comprehensively by such registries. Instead, researchers rely on specialized systems that track specific illnesses or surveys that ask individuals to report their own health status and recent medical history.

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governments understand disease burdens and prioritize interventions to improve national health outcomes.

49. (B) To provide a comprehensive picture of the comparative magnitude of health problems.
Studying the burden of disease is necessary to gain a holistic understanding of how various health conditions affect a population. It combines mortality data with information on disability and illness to provide a comprehensive picture of the comparative impact of different health problems. This information is vital for policymakers to prioritize health interventions, allocate resources efficiently, and address the most significant health challenges facing their specific regions and demographic groups.

50. (A) The average number of years a newborn infant would live if current mortality rates were to continue.
Life expectancy at birth is a summary measure of the mortality levels currently experienced by a population. It represents the average number of years a newborn infant would be expected to live if the age-specific death rates observed at the time of their birth were to remain constant throughout their entire life. This indicator serves as a benchmark for comparing the overall health and survival prospects across different countries and time periods.

51. (A) Both A and R are true and R is the correct explanation of A.
As populations undergo demographic shifts and the proportion of elderly individuals increases, the overall burden of health problems changes. Chronic and degenerative diseases, such as heart disease and diabetes, are much more prevalent among older age groups. Consequently, population aging directly leads to an increase in the total burden of non-communicable diseases. This transition requires healthcare systems to adapt by focusing more on long-term care and the management of chronic health conditions.

52. (D) Mortality and morbidity
Measuring the health of a population involves looking at both the length of life and the quality of those years. Disability-free life expectancy is a sophisticated metric that combines mortality and morbidity data into a single indicator. By accounting for the number of years lived in good health without significant functional limitations, this measure provides a more accurate reflection of a population's actual health status than traditional life expectancy alone.

53. (C) The number of years a person is expected to live without any disability.
Disability-free life expectancy is an important health indicator that focuses on the quality of survival. It represents the average number of years an individual is expected to live without experiencing any significant disability or functional impairment. This measure helps researchers and policymakers understand whether increases in total life expectancy are being accompanied by more years of healthy living or if people are instead living longer periods in a state of ill-health.

54. (B) 2 and 4 only
The distribution of health problems varies significantly across the globe, but some clear trends exist. Non-communicable diseases have become a major cause of death in many regions, including Asia and India. Estimates of the burden of disease are essential for health officials to prioritize interventions and allocate funds effectively. Unlike simpler measures, these assessments account for both the years of life lost and the impact of living with various disabilities.

55. (D) Between 7 days and 28 completed days of life.
Neo-natal mortality is divided into two distinct phases to help identify the primary causes of infant death. The early neonatal period occurs within the first week of life. A late neonatal death is specifically defined as a death occurring between seven completed days and twenty-eight completed days of life. Deaths during this phase are often influenced by environmental factors and infections, as well as the lasting effects of birth-related complications.

56. (A) Ectopic pregnancy
In demography, pregnancy wastage refers to various types of fetal loss where a pregnancy does not result in a live birth. Common examples include miscarriages, which are spontaneous losses, stillbirths, and induced abortions. While an ectopic pregnancy is a serious medical complication where the embryo implants outside

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the uterus, it is traditionally categorized as a maternal health complication rather than being included under the specific demographic concept of pregnancy wastage.

57. (A) P-3, Q-4, R-1, S-2
Different health indicators provide specialized information for public health analysis. The incidence rate tracks the flow of new disease cases. Life expectancy serves as a summary of the overall mortality level in a population. The maternal mortality rate is used to evaluate obstetric risk and the quality of maternal care. Finally, the case-fatality ratio is a measure of the virulence or lethality of a specific disease among those who are infected.

58. (A) Both Statement I and Statement II are true.
The United Nations Model Life Tables are a specialized set of demographic tools designed to represent typical patterns of mortality found across various human populations. These models are particularly valuable for researchers working in areas where reliable empirical data is unavailable. By using these standardized tables, demographers can estimate complete mortality profiles based on limited information, providing essential statistics for health planning and population projections in regions with weak vital registration systems.

59. (D) The construction of a life table requires data on fertility rates.
A life table is a mathematical model used to describe the mortality and survival experience of a hypothetical cohort. It typically follows a starting group, often one hundred thousand births, through successive ages until the last member dies. Key assumptions include that the cohort is closed to migration and that mortality rates are fixed. However, constructing a life table does not require data on fertility rates, as it focuses exclusively on mortality patterns.

60. (D) 1, 2, 3, and 4
The Mosley and Chen framework identifies several proximate determinants that directly influence child morbidity and mortality. These biological and environmental factors include maternal factors like age and parity, as well as nutrient availability. Environmental contamination, such as unsafe water and food, along with personal illness control through preventive and curative measures, also play direct roles. Together, these variables mediate the effects of broader socioeconomic conditions on the health and survival of children under five years old.

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61. (C) Direct standardization uses a standard population's age structure, while indirect uses a standard population's age-specific death rates.
Standardization techniques are used to compare mortality across populations with different age structures. The fundamental difference lies in which standard values are applied. Direct standardization involves applying the observed age-specific death rates of the study populations to a single standard age structure. In contrast, indirect standardization applies the age-specific death rates of a standard population to the actual age structures of the study populations. Both methods aim to eliminate the confounding influence of age.

62. (D) 8 per 1,000
The crude death rate is a basic demographic measure that expresses the frequency of deaths in a population over a specific period. It is calculated by dividing the total number of deaths recorded in a year by the total mid-year population and multiplying the result by one thousand. In this scenario, dividing four hundred deaths by a population of fifty thousand yields eight deaths per one thousand people for that year.

63. (A) Both A and R are true and R is the correct explanation of A.
The maternal mortality rate is a more sensitive indicator of healthcare system quality than the crude death rate. This is because most maternal deaths are preventable through timely medical interventions, such as emergency obstetric care and skilled birth attendance. High rates of maternal mortality often signal systemic failures in the availability and accessibility of essential health services for women. Consequently, this metric provides deep insight into the effectiveness of a country's reproductive health infrastructure.

64. (B) The long-term shift in mortality whereby pandemics of infection are replaced by degenerative diseases.
The epidemiological transition describes a significant long-term shift in the mortality patterns and causes of death within a population. It marks the historical progression where major outbreaks and pandemics of infectious diseases are gradually replaced by chronic, non-communicable, and degenerative conditions as the leading health challenges. This transition is typically associated with socioeconomic development, improvements in public health and sanitation, medical advancements, and the resulting aging of the national population over time.

65. (B) Geriatric care
Reproductive health is a holistic concept that focuses on well-being related to the reproductive system throughout the life course. Its key components include maternal morbidity, access to emergency obstetric care, and addressing issues related to abortion and family planning. While geriatric care is a vital part of the broader healthcare system focused on the elderly, it is not typically classified as a primary component of reproductive health, which centers on fertility and reproductive functions.

66. (A) 1 and 2 only
Infant mortality is influenced by both biological and environmental factors. Endogenous causes originate during pregnancy or birth, such as congenital malformations and prematurity. Exogenous causes arise from the external environment after birth, including infectious diseases and accidents. Understanding these different drivers is essential for public health planning. Other statements regarding the uniformity of mortality in India or the historical dominance of chronic diseases as causes of death are factually incorrect within this context.

67. (C) All of the above.
Reproductive rights encompass a broad range of human rights related to reproduction and sexual health. These include the fundamental right of all individuals and couples to decide the number, spacing, and timing of their children freely. Additionally, it involves the right to access accurate information and a full range of safe and affordable contraceptive methods. Collectively, these rights ensure that people can make reproductive decisions without facing discrimination, coercion, or violence in their lives.

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68. (D) The Sample Registration System (SRS)
Obtaining accurate national estimates of maternal mortality in India is challenging due to the relative rarity of these events. While the Civil Registration System records deaths, it is often incomplete. Therefore, the Sample Registration System has traditionally served as the primary and most reliable source for calculating the maternal mortality rate at the national level. The SRS uses a large-scale longitudinal survey to track vital events, providing the necessary data for demographic analysis and health policy.

69. (A) 4, 3, 2, 1
Mortality events in early life are defined by their timing relative to the birth process and the infant's age. The sequence begins with stillbirth, which is a fetal death occurring before delivery. This is followed by neonatal death, occurring within the first month after a live birth. Post-neonatal death follows during the remainder of the first year. Finally, child death refers to deaths that occur between the ages of one and five years.

70. (B) Any health condition attributed to and/or aggravated by pregnancy and childbirth that has a negative impact on the woman's wellbeing.
Maternal morbidity refers to any health condition that is caused or aggravated by pregnancy and childbirth and has a negative impact on a woman's overall well-being. Unlike maternal mortality, which refers specifically to death, morbidity encompasses a wide range of physical and mental health issues that can arise during the prenatal, delivery, or postpartum periods. Tracking these conditions is essential for understanding the full health burden associated with reproduction beyond just fatal outcomes.

71. (D) The import and application of public health measures and medical technologies from developed countries.
The significant decline in mortality rates experienced by many developing nations over the last century was largely driven by external medical advancements. This process involved

health conditions resulting from pregnancy and childbirth. Finally, adolescent reproductive morbidity refers to the unique health challenges faced by young people, including early pregnancy and sexually transmitted infections, which require targeted public health interventions.

131. (D) Statement I is false, but Statement II is true.
In demography, both the infant mortality rate and the under-five mortality rate use the same denominator for their calculation. This denominator is the total number of live births recorded during the year, not the mid-year population. Therefore, the first statement is false because it incorrectly identifies the base for IMR, while the second statement is true as it correctly identifies that the under-five mortality rate is calculated relative to the number of children born alive in that year.

132. (A) Coverage (completeness) and accuracy of cause-of-death reporting.
Assessing the quality of mortality data involves evaluating several key dimensions of the recording system. One primary factor is coverage, which refers to the completeness of birth and death registration within a population. Another critical element is the accuracy and specificity of the cause-of-death reporting. Together, these ensure that the gathered statistics provide a reliable and detailed picture of health patterns, which is essential for conducting demographic analysis and making informed health policy decisions.

133. (C) 1, 2, and 3 only
Infant mortality causes are classified based on their origin. Endogenous causes are those that are primarily biological or linked to the circumstances of pregnancy and birth. Examples include low birth weight, congenital malformations, and injuries sustained during delivery. These factors are distinct from exogenous causes like diarrhea or other infections, which stem from the external environment after the child is born. Distinguishing between these categories helps health officials determine whether to focus on prenatal care or environmental sanitation.

134. (C) Prevalence
Prevalence is a morbidity indicator that provides a comprehensive look at the total burden of a disease in a population at a specific point in time. It includes all existing cases, regardless of whether they are newly diagnosed or have been present for a long duration. Unlike incidence, which only tracks new occurrences, prevalence allows healthcare planners to understand the current total demand for medical services and the overall impact of chronic conditions on the community's health status.

135. (B) The right to access contraception versus religious objections.
Reproductive health is often the subject of intense ethical and social debate due to the personal and cultural values involved. A key ethical issue found in many societies is the tension between an individual's right to access contraception and reproductive services and the religious or moral objections of certain groups or providers. These debates influence public policy, legal frameworks, and the availability of healthcare, highlighting the complex intersection of human rights, personal autonomy, and societal norms.

136. (A) Both A and R are true and R is the correct explanation of A.
Life expectancy and disability-free life expectancy are both vital indicators for assessing population health. While life expectancy provides a simple summary of the quantity of years lived, it does not account for the health status of those years. Disability-free life expectancy adds a crucial dimension by indicating the quality of life in terms of physical and functional well-being. Both the assertion and the reason are true, as they correctly identify the complementary nature of these two important demographic measures.

137. (C) Life Expectancy at birth (e0)
Direct measures of mortality, such as the crude death rate, age-specific death rate, and infant mortality rate, are calculated using observed data on the number of deaths relative to a population base. In contrast, life expectancy at birth is a summary measure derived from a life table. While it is based on mortality data, it is a mathematical model representing hypothetical survival rather than a direct count or simple rate of actual deaths occurring in a population.

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79. (A) Both A and R are true and R is the correct explanation of A.
HIV/AIDS is a critical issue within maternal and child health because of the potential for vertical transmission. The virus can be passed from an infected mother to her child during pregnancy, the birthing process, or through breastfeeding. Because of this risk, programs focusing on the prevention of mother-to-child transmission are a major priority in reproductive health services. Understanding this link is essential for developing interventions that protect the health of both mothers and their infants.

80. (B) Promote a standard way of reporting and monitoring diseases and causes of death.
The tenth revision of the International Classification of Diseases is a global standard maintained by the World Health Organization. Its primary objective is to promote a uniform and consistent method for reporting, monitoring, and analyzing diseases and causes of death across all countries. This standardization is essential for generating comparable health statistics, tracking epidemiological trends, and identifying emerging public health threats, thereby supporting evidence-based health planning and resource allocation on both national and international levels.

81. (B) The debate over sex-selective abortion and prenatal sex determination.
Reproductive health involves numerous complex ethical challenges that societies must navigate. A prominent example is the debate over sex-selective abortion and the use of medical technology for prenatal sex determination. This issue raises significant concerns regarding gender discrimination, human rights, and the social implications of altered sex ratios. Such ethical dilemmas require careful consideration of legal frameworks, cultural values, and the principles of autonomy and justice within the context of reproductive healthcare.

82. (C) 1, 3 and 5 only
India currently faces a complex health scenario characterized by a double burden of disease. This involves the ongoing challenge of communicable diseases alongside a rapidly increasing prevalence of non-communicable conditions like heart disease and diabetes. Population aging is a significant factor contributing to the rise of chronic illnesses. Additionally, injuries and accidents represent a major part of the overall disease burden. These health patterns vary significantly across different states, reflecting diverse demographic and socioeconomic stages.

83. (B) The duration of the gestation period.
In demographic and medical terminology, fetal losses are categorized based on when they occur during pregnancy. The distinction between a miscarriage and a stillbirth is primarily determined by the duration of the gestation period. While definitions can vary slightly by region, a miscarriage generally refers to an early loss, whereas a stillbirth involves the death of a fetus after a specified point, such as twenty-eight weeks of pregnancy. This chronological distinction is essential for accurate health reporting.

84. (A) The total number of person-years lived by the cohort from age x until the last member dies.
In the terminology of a life table, the function 'Tx' represents a cumulative measure of the cohort's survival experience. Specifically, it denotes the total number of person-years that will be lived by all members of the hypothetical cohort from a given age 'x' until the very last member of that group dies. This value is used as a necessary intermediate step in the final calculation of life expectancy for individuals at that specific age.

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85. (A) 1, 4, 2, 3
Mortality rates within a developing country typically follow a predictable hierarchy based on their definitions. The crude death rate, which covers the entire population, usually shows the lowest numerical value. Among early life measures, the neonatal mortality rate is a component of the higher infant mortality rate, which in turn is a subset of the under-five mortality rate. Therefore, the logical sequence from the lowest to the highest rate is crude, neonatal, infant, and under-five mortality.

86. (B) Are not affected by the age composition of the population.
One of the primary advantages of age-specific death rates compared to the crude death rate is their specificity. While the crude rate is heavily influenced by the underlying age composition

of a population, age-specific rates focus on the risk of death within narrow age cohorts. This makes them a much more refined tool for analyzing mortality patterns and allows for direct comparisons between different populations without being confounded by differences in their age structures.

87. (C) India is experiencing a protracted and polarized transition, with a dual burden of both communicable and non-communicable diseases. India's health profile is characterized by a protracted and polarized epidemiological transition. Unlike many developed nations that have completed the shift to a profile dominated by chronic illnesses, India currently experiences a dual burden of disease. This involves significant challenges from both traditional infectious diseases and emerging non-communicable conditions. This complex scenario reflects the uneven socioeconomic development across the country and requires a multi-faceted public health approach to address diverse health needs simultaneously.

88. (C) P-4, Q-2, R-1, S-3
Demographic and public health tools serve specific analytical purposes. The tenth revision of the International Classification of Diseases is used to standardize cause-of-death statistics. The Mosley and Chen framework is designed to analyze the various determinants of child survival. United Nations Model Life Tables facilitate the indirect estimation of mortality when empirical data is missing. Finally, emergency obstetric care is a critical medical strategy implemented by health systems to reduce the high rates of maternal mortality.

89. (A) Both Statement I and Statement II are true
The evolution of reproductive health reflects a shift from restrictive population control to a comprehensive rights-based approach, beginning with Statement I's focus on the transition from simple family planning to the broader Reproductive and Child Health (RCH) framework established after the 1994 Cairo Conference. Statement II is equally accurate, as this modern paradigm integrates essential services such as maternal care, treatment of STIs/AIDS, and adolescent education to ensure total physical, emotional, and social well-being regarding the reproductive system.

90. (B) Infant death: Death before 5 years of age.
Accuracy in demographic terminology is essential for valid health analysis. A live birth is recorded when any evidence of life is shown after delivery, regardless of the gestation period. A stillbirth involves fetal death after a specific time, while post-neonatal death occurs between one month and one year of life. However, defining infant death as occurring before five years of age is incorrect; infant death refers specifically to mortality within the first year of life only.

91. (A) 1, 2 and 4 only
Mortality statistics are derived from multiple sources, including vital registries, censuses, and specialized surveys. Assessing the quality of this data involves checking the completeness of death registration. One of the major limitations of the crude death rate is its sensitivity to the age structure of the population, which can make comparisons misleading. While indirect estimation is useful when data is poor, it is not used when high-quality direct records are already available for a population.

92. (B) Total number of live births in a given year.
The under-five mortality rate is a key indicator of child survival and overall population health. Although it measures deaths among children up to age five, its calculation follows the same convention as the infant mortality rate. Specifically, the total number of deaths of children under five years of age is divided by the total number of live births recorded in the same year. This ratio is typically expressed as deaths per one thousand live births for standardization.

93. (C) People are living longer but spending more years in a state of ill-health or disability.
If a population's life expectancy increases while its disability-free life expectancy does not keep pace, there is a clear implication regarding the quality of life. This scenario suggests that while medical advancements and better living conditions are allowing people to live longer, those additional years are often spent in a state of ill-health or with significant functional impairments. This reflects a shift toward more chronic morbidity among the elderly, posing challenges for healthcare systems.

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94. (A) Both A and R are true and R is the correct explanation of A.
Comparing mortality between populations requires adjustment for differences in their age distributions. The crude death rate can be highly misleading because it does not account for the fact that older populations naturally have higher death rates. Even if the underlying health conditions in an older population are better than those in a younger one, its crude rate might still appear higher. Therefore, standardization is a necessary procedure to ensure fair and accurate comparisons of mortality risks.

95. (A) The 10th revision of the International Classification of Diseases, implemented around 1990.
In the context of global health statistics, "ICD-X" refers to the tenth revision of the International Classification of Diseases. This standardized system was developed by the World Health Organization and was officially introduced around 1990. It provides a comprehensive framework for coding and classifying various diseases, injuries, and causes of death. The implementation of this revision was a major step forward in improving the international comparability of health data and tracking the global burden of disease effectively.

96. (B) Crude Death Rate
Different mortality indicators respond differently to sudden changes in a population's environment. The crude death rate is particularly sensitive to short-term events such as influenza epidemics or natural disasters. Because it simply measures the total number of deaths relative to the total population in a single year, any sudden spike in mortality will be immediately and significantly reflected in this rate. In contrast, summary measures like life expectancy are less affected by these brief, transient fluctuations.

97. (D) 1, 2, 3, 4 and 5
Reproductive health is a multi-faceted field that encompasses a wide range of medical, social, and rights-based issues. It includes the management of maternal morbidity and complications from unsafe abortions, as well as addressing the specific needs of adolescents. Furthermore, the prevention and treatment of reproductive tract infections and sexually transmitted infections, including HIV and AIDS, are core components. Together, these topics form a comprehensive framework for promoting health and well-being throughout the reproductive life cycle.

98. (B) Post neo-natal mortality rate
In the study of infant survival, the first year of life is divided into two main segments. The neonatal period covers the first twenty-eight days. The period from twenty-eight days until the first birthday is known as the post-neonatal period. Therefore, the term post-natal mortality rate is conceptually synonymous with the post-neonatal mortality rate. This measure is particularly useful for tracking deaths caused by environmental factors, such as infections and nutritional deficiencies, which become more dominant after the first month.

99. (B) Five years
Life tables are demographic models used to analyze mortality and survival within a cohort. They are classified based on the level of detail they provide. While a complete life table uses single-year age intervals, an abridged life table presents data for broader age groups. The most common convention for an abridged life table is to use five-year intervals. This approach is often preferred when data is less precise or when a more concise summary of mortality is required.

100. (C) 2, 3, 1
The epidemiological transition involves a predictable progression of dominant health challenges over time. The first stage is characterized by pestilence and famine, where infectious diseases and nutritional crises cause high and fluctuating mortality. The second stage involves receding pandemics as sanitation and medical care improve. Finally, the third stage is dominated by degenerative and human-made diseases, such as heart disease and cancer. Therefore, the historical sequence of these stages is identified as two, three, and then one.

101. (A) Incidence refers to new cases, while Prevalence refers to all existing cases.
Incidence and prevalence are two distinct but related measures used to describe the occurrence of disease in a population. Incidence focuses on the flow of new cases, measuring the rate at which people develop a condition over a specific

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the rapid import and application of public health measures and medical technologies developed in more industrialized countries. Key interventions included the widespread use of vaccines, antibiotics, and improved sanitation techniques. These borrowed technologies allowed for a faster reduction in death rates than what occurred historically in developed regions themselves.

72. (B) P-2, Q-4, R-3, S-1
Health and mortality concepts can be illustrated through specific examples. Low birth weight is an endogenous cause of infant mortality because it is linked to fetal development. Within the Mosley and Chen framework, nutrient intake serves as a proximate determinant of child survival. Socioeconomic differentials are exemplified by variations in mortality rates across different wealth quintiles. Finally, the prevalence rate is a commonly used morbidity indicator that reflects the total burden of a disease.

73. (A) Both Statement I and Statement II are true.
Standardization is a vital demographic tool for comparing mortality across populations with different age structures. Indirect standardization is particularly useful when the specific age-specific death rates of a study population are unknown or considered unreliable. This technique involves applying the age-specific death rates from a reliable standard population to the actual age structure of the study population. Both statements correctly describe the application and the methodology of this important statistical procedure.

74. (A) One year
A life table is a demographic tool used to represent the mortality experience of a cohort. Life tables are classified based on the width of the age intervals they utilize. A complete life table is specifically one in which the data is presented for every single year of age, from birth until the end of life. This provides a highly detailed and precise view of mortality risks at each individual year throughout the entire human lifespan.

75. (D) 1, 2, 3, and 4
Several factors can influence the measured crude death rate of a nation. The age and sex structure of the population are critical, as mortality risks vary significantly by these demographic characteristics. Socioeconomic conditions also play a major role in determining health outcomes. Furthermore, the quality and completeness of the vital registration system itself affect the accuracy of the recorded rate. Therefore, all these elements must be considered when interpreting or comparing crude death rates.

76. (B) Disability-Adjusted Life Year (DALY)
Evaluating the global burden of disease requires a metric that accounts for both fatal and non-fatal health outcomes. The disability-adjusted life year is a sophisticated measure designed for this purpose. It combines the years of life lost due to premature mortality with the equivalent years of life lived with a disability or ill-health. This allows researchers to quantify the total health gap between a population's current status and an ideal health scenario.

77. (C) The total number of cases, new and old, existing in a defined population at a specific point in time or over a period of time.
Prevalence is a key morbidity indicator used in epidemiology to assess the total burden of a disease. It is defined as the total number of all cases, including both newly diagnosed and existing long-term cases, present within a defined population at a specific point in time or over a certain period. This metric helps healthcare planners understand the current demand for medical services and the overall impact of chronic conditions on a community.

78. (D) Adolescents often lack access to accurate information and health services.
Adolescent reproductive morbidity is a significant public health concern because young people in this age group often face unique challenges. They frequently lack access to accurate health information and appropriate medical services, which can lead to higher risks of sexually transmitted infections and complications from early pregnancy. Addressing these issues is critical, as reproductive health problems during adolescence can have long-term consequences for physical health, social well-being, and future fertility outcomes.

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109. (A) Both A and R are true and R is the correct explanation of A.
The Mosley and Chen framework is an essential analytical tool for studying child survival in developing regions. It is uniquely valuable because it bridges the gap between social science and medical research. The framework connects distal socioeconomic determinants, such as income and education, to mortality outcomes through a set of intermediate or proximate determinants like nutrition and environmental health. Both the assertion and the reason are true, with the reason correctly explaining why the framework is so useful.

110. (A) Poor control over infectious diseases, poor sanitation, and frequent famines.
Historically, nations that are now considered developed once experienced very high mortality rates. This was primarily due to a lack of control over infectious diseases, which spread easily due to poor sanitation and the absence of clean drinking water. Furthermore, frequent famines and nutritional deficiencies left populations highly vulnerable to illness. The shift away from these conditions was a major driver of the demographic transition, as public health improvements gradually reduced the threat from these traditional environmental hazards.

111. (D) Applying the Brass method to census data on children ever born and children surviving.
Indirect methods for estimating mortality are essential when official records are incomplete. A prominent example is the Brass method, which uses data from censuses or household surveys. It involves asking women about the total number of children they have ever born and the number who are still surviving. By applying mathematical models to these responses, demographers can derive reliable infant and child mortality rates. This technique is especially useful in developing countries where vital registration systems are not fully functional.

112. (B) 1, 2, 3 and 5 only
Under-five mortality is a broad indicator that encompasses all deaths occurring from birth until the child reaches five years of age. Its components include the neonatal period, which is further divided into early and late neonatal deaths, and the post-neonatal period. It also includes child deaths, which specifically refer to those occurring between the ages of one and five. Fetal deaths, however, are excluded from this measure because it only counts infants who were born alive.

113. (B) Setting priorities for public health interventions and resource allocation.
Analyzing the distribution of deaths by both age and cause is a fundamental requirement for effective public health management. This detailed information allows health officials to identify the specific diseases and demographic groups that are most at risk within a population. By understanding these patterns, governments can set clear priorities for public health interventions, allocate limited medical resources more efficiently, and develop targeted programs to address the most significant health challenges, ultimately improving national life expectancy.

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114. (C) A state of complete physical, mental, and social well-being, not merely the absence of disease.
The definition of health provided by the World Health Organization is a foundational concept in modern medicine and public policy. It moves beyond a narrow biomedical view that sees health merely as the absence of disease or infirmity. Instead, it describes health as a state of complete physical, mental, and social well-being. This holistic perspective recognizes that various social and environmental factors contribute to an individual's overall health status, necessitating comprehensive approaches to healthcare services.

115. (C) 3, 1, 2, 4
Constructing a life table from age-specific death rates involves a series of logical mathematical steps. The process begins with obtaining the observed age-specific death rates for the population. These rates are then used to calculate the probability of dying within each age interval. Once these probabilities are known, the number of survivors at the start of each age can be determined. Finally, the actual number of deaths occurring within each specific age interval is calculated for the cohort.

116. (D) Indirect standardization
Comparing mortality between a specific occupational group and the general population requires statistical adjustment for age. Company employees are typically working-age adults, while the city population includes infants and the elderly. A direct comparison of crude death rates would be misleading because the workplace has fewer high-risk individuals. Indirect standardization is the appropriate technique here, as it allows for the calculation of a standardized mortality ratio, providing a fair comparison by accounting for these significant age structure differences.

117. (D) Death certificates from the vital registration system
Morbidity data focuses on the incidence and prevalence of illness within a population. Primary sources for this information include hospital records, disease registries, and health interview surveys where people report their own health status. In contrast, death certificates from the vital registration system are the primary source for mortality data. While they record the cause of death, they do not provide information on the vast majority of non-fatal illnesses and health conditions experienced by the living population.

118. (B) P-2, Q-1, R-4, S-3
Mortality indicators are classified by the age at which death occurs. Infant mortality refers to deaths occurring anytime before the first birthday. Within this year, neonatal mortality is specifically the death of an infant in the first twenty-eight days of life. Post-neonatal mortality covers the period between twenty-eight days and one year. Finally, child mortality is the term used for deaths that occur after the first year but before the child reaches five years of age.

119. (C) Statement I is true, but Statement II is false.
Morbidity and mortality are two distinct concepts used to evaluate the health of a population. Morbidity is concerned with the levels of illness, disease, and general well-being among the living. In contrast, mortality refers specifically to the incidence of death. Therefore, the first statement accurately describes morbidity, while the second statement is false because it incorrectly attributes the study of disease prevalence to mortality, which should instead be linked to morbidity patterns and health statistics.

120. (D) MMR: To measure the mortality risk associated with all causes in the female population.
Different mortality measures serve specific analytical purposes. The crude death rate provides a broad overview of mortality, while the infant mortality rate is a sensitive indicator of socioeconomic and health conditions. Age-specific rates allow for detailed comparisons across the lifespan. However, the maternal mortality rate is not used to measure all-cause mortality for women. Instead, it specifically focuses on the mortality risk associated with complications during pregnancy, childbirth, and the immediate postpartum period, excluding other causes.

121. (B) 2 and 3 only
The concept of reproductive health has evolved significantly from a narrow focus on family planning and population control to a much broader and more holistic perspective. It emphasizes that individuals should have the ability to make informed choices about their reproduction and sexual health. This modern approach integrates various issues, including maternal care, adolescent health, and the management of sexually transmitted infections. Both the second and third statements correctly reflect these core principles and the historical shift.

122. (B) Improving access to and quality of Emergency Obstetric Care (EmOC).
A central pillar of India's strategy to reduce maternal mortality is improving the availability and quality of emergency obstetric care. Many maternal deaths result from sudden complications that arise during labor and delivery, which cannot always be predicted during pregnancy. Ensuring that women have access to medical facilities capable of providing life-saving interventions, such as surgeries and blood transfusions, is essential. This focus on institutional care aims to provide timely responses to obstetric emergencies.

123. (A) Quantify the gap between a population's current health status and an ideal situation

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where everyone lives into old age, free of disease and disability.
The burden of disease is a comprehensive concept used in public health to evaluate the total impact of all health problems within a population. It aims to quantify the gap between the current health status and an ideal situation where everyone lives to an old age in perfect health. By combining data on premature mortality and years lived with disability, this measure provides a more complete picture of the comparative magnitude of various diseases, injuries, and health risks.

124. (C) A is true but R is false.
The age structure of a population is a fundamental determinant of its crude death rate. This is because mortality risk is not uniform across all ages; instead, it is significantly higher among infants and the elderly. Consequently, a population with a larger proportion of older people will naturally record more deaths. While the assertion correctly identifies this relationship, the reason is false because the probability of dying varies greatly depending on an individual's specific age and biological health status.

125. (B) Epidemiological Transition
The shift in a population's health profile from a pattern dominated by infectious diseases to one dominated by chronic and non-communicable conditions is known as the epidemiological transition. This process is typically driven by improvements in nutrition, sanitation, and medical technology, along with lifestyle changes. As people live longer due to the control of infectious outbreaks, they become more susceptible to degenerative diseases like heart disease and cancer, which then become the primary causes of death and disability.

126. (D) Calculation of the Crude Birth Rate.
Life tables are versatile demographic tools with several important applications. They are used to calculate life expectancy at different ages and are essential for determining net reproduction rates. Specialized multi-state life tables also allow for the analysis of marital and family cycles. However, life tables are not used to calculate the crude birth rate. The crude birth rate is a simple measure based on total births and population size, whereas life tables focus exclusively on mortality and survival patterns.

127. (B) 1 and 2 only
Mortality patterns in India are characterized by significant variations across different population groups. One major differential is based on the place of residence, with urban areas typically showing lower death rates than rural regions due to better access to healthcare and infrastructure. Additionally, socioeconomic characteristics such as education level and household wealth have a strong influence on survival chances. Other factors, like gender and state-level governance, also contribute to the diverse mortality landscape observed today.

128. (A) People should be able to have a responsible, satisfying, and safe sex life and the capability to reproduce and the freedom to decide if, when, and how often to do so.
The fundamental rationale for reproductive health is based on the principle of individual autonomy and well-being. It posits that all people should have the right to a safe and satisfying sex life, alongside the capability to reproduce and the freedom to decide if, when, and how often to do so. This approach moves beyond mere population control, emphasizing that reproductive decisions should be made responsibly and freely, supported by access to accurate information and quality medical services.

129. (B) The probability that an individual alive at age x will die before reaching age x+1.
In life table terminology, the notation 'qx' represents a critical measure of mortality risk. Specifically, it denotes the probability that an individual who is currently alive at the exact age 'x' will die before reaching the next age 'x plus one'. This value is calculated for each age group and provides the mathematical foundation for determining how many survivors remain in the hypothetical cohort as it progresses through the lifespan, eventually leading to life expectancy calculations.

130. (C) P-3, Q-2, R-1, S-4
Different categories of mortality and morbidity focus on specific causes and demographic groups. Endogenous infant mortality relates to biological factors and the birth process. Exogenous infant mortality is linked to environmental factors encountered after birth, such as infections. Maternal morbidity encompasses various

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period. Prevalence, on the other hand, provides a snapshot of the total disease burden by counting all existing cases, both new and old, at a particular point in time. Understanding both is essential for effective healthcare planning.

102. (A) 10%
The case-fatality ratio is a measure of the severity or lethality of a specific illness. It is calculated by dividing the number of deaths caused by a disease by the total number of people diagnosed with that same disease over a certain period. In this town, ten deaths occurred among one hundred diagnosed individuals, resulting in a case-fatality ratio of ten percent. This metric helps public health officials evaluate how dangerous a particular disease is to those infected.

103. (A) P-1, Q-3, R-4, S-2
Different frameworks in public health focus on specific analytical needs. The burden of disease concept is used to quantify and compare the impact of various illnesses and injuries. Reproductive rights center on individual autonomy and decision-making regarding fertility. The epidemiological transition tracks long-term shifts in the dominant disease patterns of a population. Finally, the application of life tables is primarily focused on the detailed analysis of mortality patterns and the survival experience of a cohort.

104. (C) Statement I is true, but Statement II is false.
Life expectancy at birth is calculated using a period life table, which relies on a specific mathematical assumption. It assumes that a hypothetical newborn cohort will experience the age-specific mortality rates currently observed in the population throughout their entire lives. This is different from a real cohort life table, which tracks the actual deaths of a group of people from birth until the last member dies. Therefore, the first statement about the constant mortality assumption is true, while the second is false.

105. (C) They are used when a country has perfect and complete mortality data.
The United Nations Model Life Tables are valuable demographic tools derived from empirical mortality patterns found in many different countries. They are grouped into families representing various geographic or epidemiological characteristics. These models are specifically intended for use in situations where a population's own mortality data is incomplete, defective, or non-existent. Therefore, the claim that they are used when a country has perfect and complete data is incorrect, as empirical data would be preferred in such ideal circumstances.

106. (A) 1 and 4 only
The health profile in Asia and India has shifted significantly, with non-communicable diseases now serving as a leading cause of death. This trend reflects broader demographic changes and urbanization. The use of the International Classification of Diseases coding system is essential for understanding these patterns and ensuring that health statistics are comparable. However, infectious diseases have not been eradicated, and the distribution of causes of death varies greatly by age, making the other statements factually incorrect.

107. (C) Sensitivity to socio-economic conditions and the quality of the healthcare system.
The infant mortality rate is widely considered one of the most useful indicators of a nation's overall health status. Its primary merit lies in its high sensitivity to a wide range of factors, including socioeconomic conditions, nutritional standards, and the quality and accessibility of the healthcare system. Because infants are highly vulnerable to their environment, fluctuations in this rate provide immediate feedback on the effectiveness of public health interventions and the general living standards.

108. (C) The promotion of abortion as a primary family planning method.
Within the context of reproductive health, abortion-related issues encompass a wide spectrum of legal, medical, and ethical concerns. This includes analyzing the frameworks governing abortion, ensuring access to safe post-abortion care, and understanding the prevalence of unsafe practices. However, promoting abortion as a primary method of family planning is not a goal of reproductive health programs. Instead, the focus is on providing comprehensive contraceptive services to prevent unintended pregnancies while ensuring safe medical care.

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138. (B) Factors like income, education, and occupation are correlated with life expectancy and survival rates.
Extensive research in demography consistently shows a strong correlation between socioeconomic characteristics and mortality outcomes. Factors such as income level, educational attainment, and occupational status are key determinants of life expectancy and survival rates. Individuals in higher socioeconomic groups typically have better access to nutrition, clean environments, and quality healthcare, leading to lower mortality. These social differentials highlight that mortality is not solely a biological process but is also heavily influenced by social and economic conditions.

139. (C) 1, 2, 3 and 5 only
Morbidity is a central concept in public health that refers to the condition of being unhealthy or diseased. It is measured through indicators such as incidence and prevalence, with data often gathered from health surveys and hospital registries. Morbidity data is essential for developing effective health policies and tracking long-term shifts in disease patterns, such as those described by the epidemiological transition. Statements claiming that morbidity is irrelevant to policy or not linked to these transitions are factually incorrect.

140. (A) Reduce maternal deaths by managing complications of pregnancy and childbirth.
The implementation of emergency obstetric care services is a primary strategy for reducing maternal deaths. This type of care focuses specifically on the management of life-threatening complications that can occur during pregnancy, labor, and the immediate postpartum period. By providing timely medical interventions, such as surgical procedures and blood transfusions, these services aim to save the lives of women who experience unpredictable emergencies. This focus is a critical component of broader efforts to improve reproductive health.

141. (C) The epidemiological transition
A major shift in the leading causes of death from infectious and acute conditions to chronic and non-communicable diseases is the defining hallmark of the epidemiological transition. Historically, pneumonia and diarrhea were significant threats, but as populations urbanize and public health improves, conditions such as heart disease and cancer become more prevalent. This transition is closely linked to socioeconomic development and an aging population, reflecting a fundamental change in the health challenges and mortality patterns experienced by modern societies.

142. (B) 2, 1, 4, 3
Constructing a life table involves a specific sequence of mathematical steps to ensure accuracy. The process begins with calculating the probability of dying, denoted as 'qx', for each age interval. This probability is then used to determine the number of survivors, or 'lx', at each successive age. Once the survival pattern is established, the total person-years lived, 'Lx', are calculated. Finally, these values are used to derive life expectancy, 'ex', for each age group in the cohort.

143. (C) Life expectancy at birth is generally higher in developed regions.
Global mortality patterns show significant differences between developed and developing regions. While some health challenges are universal, life expectancy at birth is generally much higher in developed countries due to better living conditions and more advanced healthcare systems. In contrast, developing regions often face higher infant and maternal mortality rates. Furthermore, the leading causes of death differ, with developed nations primarily burdened by chronic illnesses, while many developing countries still face a double burden of disease.

144. (B) Socio-economic determinant
In the analytical framework developed by Mosley and Chen to study child survival, factors are categorized based on how they influence health. Parental education is classified as a socioeconomic determinant. These are considered distal or underlying factors that do not directly cause disease but instead influence the biological or proximate determinants, such as nutritional status and hygiene practices. By improving knowledge and economic opportunities, parental education indirectly leads to better health outcomes and increased survival chances for young children.

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functions. The number of survivors at the beginning of an age interval is denoted by 'lx'. The actual number of deaths occurring within that same interval is represented by 'dx'. The probability of an individual dying during that age period is shown as 'qx'. Finally, the average remaining lifetime for a person at a given age, known as life expectancy, is indicated by the notation 'ex' in demographic analysis.

204. (C) Statement I is true, but Statement II is false.
The crude death rate can be a misleading indicator for comparing the overall mortality risk between two populations. A developed country often has a larger proportion of elderly individuals, which naturally leads to a higher crude death rate because mortality risk increases with age. This does not mean that the underlying health conditions or mortality risks at each age are worse than in a younger population. Therefore, while the first statement is true, the second is false because the higher rate is due to age structure.

205. (C) All countries and regions pass through the transition at the same speed.
The epidemiological transition is a significant shift in a population's disease profile, moving from infectious to chronic conditions as the leading causes of death. This process is closely linked to socioeconomic development, medical advancements, and population aging. However, it is important to recognize that this transition does not occur at the same speed or in the same way for all countries and regions. Some areas may experience a protracted and polarized transition with a dual burden of disease.

206. (A) 1 and 2 only
Precise terminology is essential for accurate demographic reporting. Pregnancy wastage encompasses events such as miscarriages and stillbirths. Late neonatal death is specifically defined as occurring between seven and twenty-eight days of life. Child death refers to deaths between ages one and five, while infant death covers the first year. A fetal death is the death of a fetus before birth, which is distinct from an early neonatal death occurring after a live birth. Therefore, only the first two statements are correct.

207. (D) Measure the average number of years a person can expect to live in good health.
The primary objective of calculating disability-free life expectancy is to gain a deeper understanding of the quality of survival in a population. While standard life expectancy measures only the quantity of years lived, it does not distinguish between years spent in good health and those spent in sickness. Disability-free life expectancy addresses this by measuring the average number of years a person can expect to live without significant functional impairment. This indicator helps researchers determine if people are experiencing healthier living.

208. (A) Child death
In demography and public health, mortality is categorized into specific periods based on the age at which death occurs. Infant mortality refers to deaths that happen within the first year of life. When a child dies after their first birthday but before reaching the age of five, the event is specifically classified as a child death. Therefore, the death of a child at age three falls into the category of child mortality, which is a key component of the broader under-five mortality indicator.

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209. (A) Both A and R are true and R is the correct explanation of A.
Many developing countries face significant challenges regarding the quality and completeness of their mortality data. This problem is frequently caused by a weak or incomplete civil registration system, where many deaths, especially those occurring at home or in remote areas, go unrecorded. This under-reporting makes it difficult to calculate accurate mortality rates directly. Both the assertion and the reason are true, with the reason correctly explaining why official records often fail to provide a comprehensive picture of true survival patterns.

210. (A) The mid-year population aged 20-24.
The age-specific death rate is a refined mortality measure that calculates the risk of death within a particular age cohort. To determine the rate for a specific group, such as those aged twenty to twenty-four, the number of deaths occurring among individuals in that age range is divided by the mid-year population of the same age group.

in a ratio of five percent. In the second city, one hundred deaths out of two thousand cases also yields five percent. Therefore, despite the different total numbers, the case-fatality ratio is identical in both cities.

153. (A) Projecting the future population by age and sex.
Life tables are powerful demographic tools with multiple analytical applications. One of their primary uses is in projecting the future size and age-sex structure of a population. By applying the survival probabilities derived from the life table to the current population, demographers can estimate how many people will be alive at each age in the future. This information is essential for long-term social and economic planning, including the provision of education, healthcare, and pension systems for aging populations.

154. (B) 2, 3 and 4 only
Different mortality indicators provide specialized insights into population health. The infant mortality rate and maternal mortality rate are highly sensitive measures of socioeconomic development and obstetric care quality. Age-specific death rates offer a detailed view of mortality across the entire lifespan. While the crude death rate is a simple overall measure, it is not suitable for comparing populations with different age structures. Additionally, the under-five mortality rate is more comprehensive than the infant mortality rate.

155. (C) Signs of life (breathing, heartbeat, etc.) at the time of birth.
The distinction between a stillbirth and an early neonatal death is based on the timing of death relative to the delivery process. A stillbirth refers to a fetal death, meaning the product of conception shows no signs of life, such as breathing or a heartbeat, at the time of birth. In contrast, an early neonatal death occurs when an infant is born alive but dies within the first week of life. Accurate classification between these two events is essential for health statistics.

156. (B) A sub-national region in a developing country with no reliable death registration system.
Model life tables are demographic tools specifically designed for use in regions where empirical mortality data is either defective or completely unavailable. They are most justified for sub-national regions in developing countries that lack reliable and comprehensive vital registration systems. By using these standardized patterns, researchers can estimate a complete mortality profile based on limited information, such as child mortality rates. This allows for essential health and population analysis in areas where direct measurement is currently impossible.

157. (B) P-2, Q-3, R-1, S-4
Public health and demographic concepts focus on different analytical tasks. Standardization is the technique used to adjust for age structure to allow for fair comparisons between populations. Morbidity refers to the general state of ill-health or disease. The epidemiological transition identifies the shift from infectious diseases to chronic conditions as the leading health challenges. Finally, the burden of disease is a sophisticated measure that combines mortality and disability data to provide a holistic view.

158. (B) Both Statement I and Statement II are false.
In the study of infant mortality, causes of death are categorized by their origin. Endogenous deaths are those linked to biological factors, fetal development, and the birthing process, such as congenital anomalies. Conversely, exogenous deaths result from environmental factors encountered after birth, including infections, nutritional deficiencies, and accidents. Therefore, both statements provided are false because they incorrectly swap the definitions of endogenous and exogenous causes. Accurate classification of these causes is essential for designing effective interventions.

159. (B) National Family Health Survey (NFHS) data on self-reported illness.
Morbidity data is used to track the incidence and prevalence of illness within a population. Unlike mortality data, which is captured by vital registries, morbidity information often comes from specialized health surveys. A prominent example is the National Family Health Survey, which collects data on self-reported illnesses and health behaviors. These surveys provide valuable insights into the health status of individuals that are not recorded in official death records or

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illness, not death statistics; incidence refers to new cases, not all existing ones; and life tables are used for mortality and life expectancy analysis rather than for calculating crude birth rates. Therefore, reproductive health is the correct one.

175. (C) 1, 2, and 3 only
Mortality rates in India exhibit significant variations across several key dimensions. There is a clear differential by place of residence, with rural areas generally showing higher mortality than urban centers. Gender-based differences are also present, particularly in child mortality in some regions. Furthermore, socioeconomic factors like education and household wealth strongly influence survival chances. Claims that mortality is uniform across all states or that wealth has no impact are factually incorrect given the diverse demographic and health outcomes.

176. (B) Maternal deaths are relatively rare events, so a larger denominator base is used to yield a whole number.
Mortality indicators use different denominator bases to ensure that the resulting rates are easy to read and compare. While the infant mortality rate is expressed per one thousand live births, the maternal mortality rate is conventionally reported per one hundred thousand live births. This larger scale is necessary because maternal deaths are relatively rare events compared to infant deaths. Using a larger base yields a whole number that is more stable and suitable for statistical analysis.

177. (A) The diseases and injuries that cause the highest number of deaths worldwide.
The term "global leading causes of death" refers to the specific diseases and injuries that are responsible for the highest total number of deaths worldwide. Tracking these causes is essential for global health organizations to understand emerging threats and prioritize research and resource allocation. While the dominant causes vary by region and income level, this overall ranking highlights the most significant challenges to human survival and reflects the current state of the global epidemiological transition.

178. (B) The prevalence and impact of chronic and degenerative diseases are likely to increase.
Population aging has a profound impact on the overall health profile of a nation. As the proportion of elderly individuals increases, the burden of disease shifts significantly toward chronic and degenerative conditions. Older people are more likely to suffer from heart disease, cancer, diabetes, and other non-communicable diseases that require long-term management rather than just acute treatment. This demographic shift necessitates a change in healthcare infrastructure, moving from a focus on infectious disease control to geriatric care.

179. (A) Both A and R are true and R is the correct explanation of A.
Precise definitions for vital events like live birth and fetal death are essential for accurate demographic analysis. If an infant who shows signs of life is born and then dies shortly after, it must be recorded as both a live birth and a neonatal death. If such an event is misclassified as a stillbirth, the resulting statistics will artificially lower the measured infant mortality rate. Both statements are true, with the reason correctly explaining the critical importance of these definitions.

180. (A) Create a comprehensive and comparable assessment of the impact of mortality and disability.
The study of the burden of disease is necessary to create a comprehensive and comparable assessment of the impact that different health problems have on a population. It uniquely combines mortality data with the consequences of living with various disabilities and chronic illnesses. This provides a much more holistic view of health than simply counting deaths alone. Such detailed information is vital for policymakers to prioritize health interventions, allocate limited national resources more effectively, and improve well-being.

181. (C) 10
The infant mortality rate is a fundamental demographic indicator used to assess child survival and overall health standards. It is calculated by dividing the total number of infant deaths recorded in a year by the total number of live births in that same year and then multiplying by one thousand. In this hypothetical scenario, dividing two thousand deaths by two hundred thousand live births results in an infant mortality rate of ten deaths per one thousand live births.

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and a lack of access to safe drinking water. These conditions allowed infectious diseases to spread easily through populations that were often also weakened by nutritional deficiencies. The historical decline in mortality was significantly accelerated by public health interventions that addressed these basic environmental risks and improved hygiene standards.

168. (A) The average number of years lived with a disability.
Life expectancy and disability-free life expectancy are two related measures that provide different insights into a population's health status. Life expectancy measures the total number of years an individual is expected to live, while disability-free life expectancy only counts those years lived in good health. Therefore, the numerical difference between these two indicators represents the average number of years a person is expected to live in a state of ill-health, disability, or functional impairment.

169. (A) 1, 2, 3
In a standard high-mortality developing country, early life mortality indicators typically follow a predictable numerical order based on their age definitions. The neonatal mortality rate, which covers only the first month, is usually the lowest. The infant mortality rate is higher as it encompasses the entire first year, including the neonatal period. The under-five mortality rate is the highest of all, as it includes both infant deaths and all subsequent deaths occurring before the child reaches age five.

170. (A) Age-Specific Death Rate (ASDR)
Evaluating the specific mortality risk within a population requires metrics that focus on restricted groups. The age-specific death rate is the direct measure used for this purpose. It calculates the frequency of deaths occurring among individuals within a particular age range, relative to the total number of people in that same age group. This allows researchers to identify which stages of life carry the highest risks and facilitates accurate comparisons between populations without being confounded by age structure.

171. (C) A dual burden of both communicable and non-communicable diseases, with significant state-level variations.
The current burden of disease in India is characterized by a complex dual burden. This involves the persistent challenge of communicable, maternal, neonatal, and nutritional diseases alongside a rapidly increasing prevalence of non-communicable diseases such as heart disease and diabetes. Furthermore, this health profile shows significant variations across different states and Union Territories, reflecting their diverse stages of demographic and epidemiological transition. Addressing these multifaceted challenges requires flexible and state-specific public health strategies.

172. (B) P-2, Q-3, R-4, S-1
Mortality and morbidity measures are calculated using specific formulas. The crude death rate is the ratio of total deaths to total population. The infant mortality rate uses deaths of infants under one year relative to live births. Prevalence is determined by the number of existing cases in the population. Finally, the case-fatality ratio is calculated as the proportion of deaths among those who have a specific disease, traditionally expressed as a percentage to indicate lethality.

173. (D) Statement I is false, but Statement II is true.
Reproductive tract infections are a broad category encompassing various infections of the reproductive system. While some of these can be caused by the overgrowth of naturally occurring organisms, others are specifically transmitted through sexual contact. Sexually transmitted infections are therefore considered a distinct subset of reproductive tract infections. Consequently, the first statement is false because not all reproductive infections are sexually transmitted, while the second statement correctly identifies the relationship where STIs are a smaller category within RTIs.

174. (A) Reproductive Health: A holistic approach including well-being, rights, and services.
Accurate terminology is fundamental to public health analysis. Reproductive health is correctly described as a holistic approach that includes physical, mental, and social well-being, along with rights and services. Other definitions provided are incorrect: morbidity is the state of

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inequalities in health outcomes across different groups, showing how factors like education and wealth influence survival. By understanding which specific groups have higher death rates, health officials can design more effective and better-targeted public health interventions. Both statements are true, with the second explaining the practical policy importance of gathering and analyzing detailed data on socioeconomic differences in mortality.

190. (A) An increase in the proportion of the disease burden attributable to non-communicable diseases.
As a population's average age increases, the nature of its disease burden undergoes a fundamental shift. Older individuals are significantly more likely to suffer from chronic, degenerative, and non-communicable conditions. Consequently, population aging leads to an increase in the proportion of the total disease burden that is attributable to diseases such as cancer, diabetes, and heart disease. This trend requires healthcare systems to adapt by allocating more resources toward long-term management, geriatric care, and the support of individuals with chronic conditions.

191. (C) 1, 2, and 3 only
Mortality estimation involves both direct and indirect methods. Direct methods utilize records of actual births and deaths from vital registries or specialized surveys. Indirect methods are used when these direct records are incomplete or unreliable, deriving rates from other sources like census data on child survival. Generally, direct methods are preferred if the data source is robust and high-quality. Therefore, the first three statements correctly describe the application and methodology of these two approaches used to generate reliable statistics.

192. (D) Total live births in the year.
In demography, the calculation of mortality rates in the first year of life follows a consistent convention. The neonatal period covers the first month, and the post-neonatal period covers the remainder of the first year. Despite focusing on deaths that occur after the first month, the post-neonatal mortality rate uses the total number of live births recorded during the year as its denominator. This ensures that the rate is standardized and comparable with other infant mortality indicators used in health analysis.

193. (D) Facilitate valid comparisons of mortality risk between populations with different age distributions.
The primary benefit of using age-standardized mortality rates is that they facilitate valid comparisons between different populations. Because mortality risk is strongly related to age, a population with many elderly people will naturally have a higher crude death rate. Standardization removes this confounding influence by applying a single age structure to all groups. This allows researchers to determine whether differences in mortality are due to actual health risks and underlying conditions rather than simply being a reflection of age.

194. (A) Both A and R are true and R is the correct explanation of A.
India exhibits significant regional variations in the burden of disease across its various states. These variations exist because different states are at distinct stages of demographic and epidemiological transition. Furthermore, levels of socioeconomic development and the performance of health systems vary widely throughout the country. Both the assertion and the reason are true, with the reason correctly explaining why a single national average often masks the diverse and complex health challenges faced by individual states.

195. (A) human rights and individual autonomy in reproductive decision-making.
The concept of reproductive rights is fundamentally based on the principles of human rights and individual autonomy. It recognizes that every person has the basic right to make informed and responsible decisions regarding their own reproduction. This includes the freedom to choose the number, spacing, and timing of their children without facing coercion, discrimination, or violence. This approach emphasizes that reproductive health services should be accessible and respectful of personal choice, reflecting a broader commitment to individual dignity.

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182. (D) 1, 2, 3, 4 and 5
Within the comprehensive study of reproductive health, abortion-related issues encompass a wide range of legal, clinical, and social dimensions. This includes analyzing the legal status of the procedure, ensuring access to safe services, and providing essential post-abortion care for complications. Furthermore, it involves exploring the ethical debates surrounding personhood and reproductive rights, as well as addressing social challenges such as sex-selective abortion. Together, these elements form a critical part of the framework for understanding and improving reproductive well-being worldwide.

183. (A) The width of the age intervals.
Life tables are demographic models used to represent mortality and survival within a cohort. The primary difference between a complete life table and an abridged life table lies in the width of the age intervals used for the analysis. A complete life table uses detailed data for every single year of age. In contrast, an abridged life table uses broader age intervals, most commonly five-year periods. This distinction allows for either a highly precise or a more concise summary of mortality patterns.

184. (D) Tetanus infection
Causes of child mortality are categorized into endogenous and exogenous types. Endogenous causes are linked to biological factors and the birthing process, such as congenital defects and prematurity. Exogenous causes result from environmental factors encountered after the child is born. Tetanus infection is a clear example of an exogenous cause, as it is contracted from the environment. Distinguishing between these categories is essential for public health, as exogenous causes are often preventable through interventions like improved sanitation and immunization.

185. (B) 3, 1, 2
The focus of public health programs has undergone a clear historical progression. Initially, programs were often centered on vertical initiatives for family planning and population control. This was followed by a period where maternal and child health became the primary emphasis. Later, a more comprehensive reproductive health framework was introduced, integrating these earlier ideas into a broader approach that emphasizes rights and well-being. Therefore, the correct chronological sequence of emphasis is identified as three, then one, and finally two in the global health discourse.

186. (A) Quality of life
Traditional measures of survival, such as life expectancy, focus only on the total quantity of years lived. However, this does not provide information about the health status of a population during those years. The concept of disability-free life expectancy adds a crucial dimension of quality of life to this analysis. By measuring the average number of years a person can expect to live without significant disability or functional impairment, this indicator provides a more complete and meaningful assessment of human well-being.

187. (A) Infant Mortality Rate (IMR)
The infant mortality rate is highly sensitive to the quality and accessibility of maternal and child health services. Because infants are extremely vulnerable to their immediate environment and the care they receive, variations in this rate provide direct feedback on the effectiveness of medical interventions, nutritional standards, and general sanitation. High rates often signal systemic gaps in healthcare provision and social support. Consequently, this metric is a primary indicator used by health organizations to evaluate the progress of reproductive programs.

188. (A) P-3, Q-1, R-2, S-4
Different health indicators provide specialized information for demographic analysis. The incidence rate measures the flow of new cases into a population. Prevalence provides a snapshot of the total existing disease burden at a specific time. The case-fatality ratio indicates the lethality or severity of a particular illness. Finally, life expectancy serves as a summary measure representing the overall mortality conditions and survival prospects of a population based on current age-specific death rates. Together, these metrics offer a comprehensive view of health.

189. (A) Both Statement I and Statement II are true.
Studying mortality differentials by socioeconomic characteristics is a vital part of public health research. These studies reveal significant

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145. (A) P-4, Q-2, R-1, S-3
Mortality and health indicators are often identified by their standard abbreviations. The maternal mortality rate measures deaths per one hundred thousand live births. The infant mortality rate tracks deaths of infants under one year per one thousand live births. Age-specific death rates represent the frequency of deaths within a specific age cohort. Finally, the crude death rate is a broad measure that indicates the total number of deaths per one thousand people in the general mid-year population.

146. (C) Statement I is true, but Statement II is false.
The study of the burden of disease is essential for gaining a holistic understanding of health within a population. It provides a comprehensive picture of the comparative impact of various illnesses, injuries, and health risks. This analysis is unique because it moves beyond simply counting the number of deaths; it also incorporates the impact of living with various disabilities and chronic conditions. Both the first statement about comparative impact is true, while the second statement regarding only counting deaths is false.

147. (A) They are used to calculate life expectancy.
A life table is a sophisticated demographic model used to analyze the mortality and survival experience of a cohort. It is based on observed age-specific death rates and is a fundamental tool for calculating life expectancy. These models have wide applications in public health, demographic projections, and the insurance industry. However, a core assumption of the life table is that the cohort is closed to migration. Therefore, stating that life tables assume high rates of migration is factually incorrect.

148. (D) 1, 2, 3, and 4
The modern concept of reproductive health and rights is a broad framework that emphasizes individual autonomy and comprehensive care. It includes the right to access safe abortion services and the management of any resulting complications. Furthermore, it encompasses the freedom to decide the number and spacing of children, alongside the right to receive accurate information and services for contraception. Together, these elements ensure that all people can make informed and safe decisions about their reproductive lives.

149. (B) Mortality data helps identify vulnerable groups and priority areas for health programs.
Studying mortality is essential for effective public health policy and the design of targeted interventions. Mortality data provides critical insights into which demographic groups are most vulnerable and which regions or diseases represent the highest health risks. By identifying these priority areas, governments can allocate limited resources more efficiently and develop programs that directly address the most significant health challenges. This evidence-based approach is vital for improving overall national health outcomes and reducing survival inequalities.

150. (B) The diffusion of low-cost public health technologies like vaccines and antibiotics.
A major driver of the mortality decline observed in developing countries during the twentieth century was the rapid diffusion of medical and public health technologies. This involved the widespread adoption of relatively low-cost interventions, such as vaccines, antibiotics, and improved sanitation methods, which were often developed in industrialized nations. These advancements allowed for a significant reduction in deaths from infectious diseases, even in regions that had not yet experienced large-scale economic development, leading to faster mortality declines.

151. (A) Both A and R are true and R is the correct explanation of A.
HIV/AIDS is considered a central issue within the field of reproductive health. This is because the virus is primarily a sexually transmitted infection, directly linking it to sexual and reproductive activities. Furthermore, HIV can be passed from an infected mother to her child during pregnancy, childbirth, or through breastfeeding. Both the assertion and the reason are true, with the reason providing a clear explanation for why HIV management and prevention are critical components of comprehensive reproductive healthcare services.

152. (C) The CFR is the same in both cities.
The case-fatality ratio is a metric used to evaluate the lethality of a disease among those who are infected. It is calculated as the number of deaths divided by the total number of cases. In the first city, fifty deaths out of one thousand cases results

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196. (A) CDR considers the whole population, while ASDR focuses on a specific age group.
The crude death rate and the age-specific death rate are two fundamental mortality measures with different scopes. The crude death rate considers the entire population and relates the total number of deaths to the total mid-year population. In contrast, the age-specific death rate focuses on a restricted age group, measuring the mortality risk specifically within that cohort. This specificity makes age-specific rates a much more precise tool for analyzing health patterns and comparing survival across different demographic segments.

197. (B) 2, 3 and 4 only
Evaluating the health of a population involves several key morbidity indicators. The incidence rate tracks the flow of new disease cases, while prevalence measures the total proportion of existing cases at a specific time. The case-fatality ratio is a specialized metric used to assess the severity and lethality of a disease among those infected. However, mortality refers to death, not illness, and health is defined as more than just the absence of morbidity. Therefore, statements two, three, and four correctly describe these concepts.

198. (C) Burden of Disease (e.g., DALYs)
A comprehensive assessment of a population's health status requires a metric that integrates multiple dimensions of well-being. While simple mortality rates focus only on death, burden of disease measures, such as disability-adjusted life years, provide a much more holistic view. These indicators combine data on premature mortality with the impact of living with various disabilities and chronic illnesses. This integrated approach allows for a better understanding of the total health gap and the comparative magnitude of various health challenges.

199. (B) Period or current life table
Life tables are classified based on the nature of the mortality data they utilize. A period life table, also known as a current life table, is constructed using the age-specific mortality rates observed in a population during a single, specific year. It represents the mortality experience of a hypothetical cohort that is assumed to be subject to those specific rates throughout its entire life. This differs from a cohort life table, which tracks the actual deaths of a real group over time.

200. (B) Malnutrition, poor sanitation, and inadequate access to quality healthcare
Despite significant progress, high rates of infant and child mortality persist in parts of India due to several interrelated factors. Malnutrition remains a major underlying challenge, leaving young children more vulnerable to illness. Poor environmental sanitation and inadequate access to safe drinking water also contribute to the spread of infectious diseases. Furthermore, gaps in the availability and quality of healthcare services, especially in rural or underdeveloped regions, prevent many families from receiving timely and effective medical treatment for common childhood illnesses.

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201. (C) Number of deaths of infants under 28 days of age per 1,000 live births in a given year.
The neonatal mortality rate is a specific health indicator that focuses on the survival of infants during their first month of life. It is defined as the number of deaths of live-born infants occurring within the first twenty-eight completed days of life, expressed per one thousand live births in a given year. Deaths during this period are often caused by biological factors or complications during birth, making this rate a critical measure for evaluating the quality of obstetric and newborn care.

202. (A) Socioeconomic determinants with proximate determinants.
The Mosley and Chen framework is an analytical tool specifically designed to study the determinants of child survival in developing regions. Its unique value lies in how it connects two different levels of factors. It links broad socioeconomic determinants, such as maternal education and household income, with biological or proximate determinants like nutritional status and environmental health. By showing how social conditions influence these intermediate variables to produce health outcomes, the framework provides a comprehensive understanding of the complex drivers of child mortality.

203. (C) P-3, Q-4, R-1, S-2
Life tables utilize standardized symbols to represent different mortality and survival

census counts, making them a primary source for morbidity analysis.

160. (A) 1 and 2 only
The analytical framework developed by Mosley and Chen to study child survival distinguishes between different levels of influence. Socioeconomic, or distal, determinants are underlying factors that affect health indirectly through proximate determinants. Examples of these distal factors include maternal education and household income. In contrast, factors like access to clean water and immunization coverage are considered proximate determinants because they have a direct biological or environmental impact on the risk of illness and death for young children.

161. (B) It can be misleading when comparing populations with different age structures.
The crude death rate is a simple and commonly used measure of mortality, but it has significant limitations. Its primary demerit is that it is heavily influenced by the age and sex structure of the population. This means that a population with a larger proportion of elderly individuals will naturally have a higher crude rate, even if its underlying health conditions are better. This confounding effect makes the crude death rate a potentially misleading indicator when used for direct comparisons between populations.

162. (A) 20 per 1,000 live births
The infant mortality rate is a key indicator of child survival and a sensitive gauge of overall health and socioeconomic standards. It is calculated by dividing the total number of deaths of infants under one year of age by the total number of live births recorded in the same calendar year. In this scenario, eighty infant deaths divided by four thousand live births results in a rate of twenty deaths per one thousand live births for the city.

163. (A) Both A and R are true and R is the correct explanation of A.
The concept of reproductive health is significantly broader than the traditional focus on maternal and child health. While maternal and infant well-being are essential components, reproductive health encompasses the entire life cycle. It includes a wider range of issues such as adolescent health, reproductive rights, and the management of sexually transmitted infections. Both the assertion and the reason are true, with the reason correctly explaining the expanded scope and holistic nature of the modern reproductive health framework.

164. (B) Case-fatality ratio
The case-fatality ratio is a specialized metric used in public health to evaluate the severity or lethality of a specific disease. It is defined as the number of deaths caused by an illness occurring among the total group of people who are actually afflicted with that disease. This measure differs from the mortality rate because its denominator is restricted to those who are already sick, providing a clear indication of the danger the disease poses to an individual patient's survival.

165. (C) National Burden of Disease Estimates
Reproductive health is a multi-faceted field that addresses various medical and rights-based issues throughout the lifespan. Core components include maternal care, management of HIV and other sexually transmitted infections, and adolescent reproductive issues. However, national burden of disease estimates are a broad demographic and statistical tool used to assess all types of health problems. While they include reproductive conditions, these estimates themselves are not considered a primary clinical or service-oriented component of the reproductive health framework.

166. (B) 2, 3 and 4 only
Life tables are demographic models that analyze the mortality and survival experience of a cohort. Key assumptions include that the cohort is closed to migration and that they are based on either period or cohort data. The measure 'e0' represents life expectancy at birth. Life tables are classified into complete types, using single years, and abridged types, using multi-year intervals. Model life tables, however, are specifically used when empirical data is defective rather than when it is perfect for a population.

167. (C) Poor sanitation and lack of safe drinking water.
High mortality rates in the past were largely driven by environmental and biological factors that are now better controlled. A primary reason for the high frequency of deaths was poor sanitation

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This population base is used as the denominator to ensure that the resulting rate accurately reflects the mortality experience unique to that specific demographic segment.

211. (C) Its scope is limited to increasing the birth rate.
Reproductive health is a comprehensive framework centered on well-being and rights. Its rationale includes addressing significant causes of morbidity and mortality for women and ensuring human rights and equity in medical care. The scope of this approach extends throughout the entire lifespan and affects adolescents, men, and women. Therefore, the claim that its purpose is limited only to increasing the birth rate is incorrect, as reproductive health focuses on healthy outcomes and informed choices rather than simply increasing population growth levels.

212. (B) 1, 3, 4, and 5 only
Evaluating the health status of mothers and children requires several specialized mortality indicators. These key metrics include the infant mortality rate, neonatal mortality rate, and under-five mortality rate, which collectively track child survival at different stages. Furthermore, the maternal mortality rate is essential for measuring the risks associated with pregnancy and childbirth. While the crude death rate provides a broad overview of the entire population, it is not considered a specific indicator for monitoring the particular health challenges of mothers and infants.

213. (B) The age-specific death rates observed in the specified period will apply to the cohort throughout its life.
Constructing a period life table from currently observed age-specific death rates requires a fundamental mathematical assumption. It is assumed that a hypothetical cohort of births will be subject to these same age-specific rates throughout their entire lives as they age from one cohort to the next. This provides a snapshot of current mortality conditions but does not track a real group over time. This assumption is necessary to derive life expectancy and other summary measures from data collected during a year.

214. (C) The incidence and prevalence of disease and illness in a population.
Morbidity is a fundamental concept in public health and demography that refers to the state of being diseased, injured, or unhealthy. It specifically focuses on the incidence and prevalence of various illnesses and health conditions within a population, rather than on death. Tracking morbidity is essential for understanding the overall health burden on a society, evaluating the effectiveness of medical treatments, and planning for the provision of healthcare services that address the needs of those with health problems.

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215. (A) 2, 3, 1
Mortality events are categorized based on the timing of their occurrence relative to the birth process. The sequence begins with fetal death, which occurs before birth. If an infant is born alive, any death occurring within the first month is classified as a neonatal death. This is followed by postnatal death, which covers the remainder of the first year of life. Therefore, the correct chronological sequence for these specific mortality concepts from conception through the first year is fetal, neonatal, and then postnatal death.

216. (A) Improving the comparability and statistical analysis of cause of death data.
The introduction and global adoption of the International Classification of Diseases represented a major advancement for public health research. By providing a standardized system for coding and classifying health conditions, it significantly improved the comparability of cause-of-death statistics across different countries and regions. This consistency is essential for conducting international epidemiological studies, tracking the spread of diseases, and evaluating health interventions. It ensures that health data is recorded in a way that is scientifically rigorous and statistically meaningful.

217. (B) Mortality rates differ between urban and rural populations.
In the context of Indian demography, a significant mortality differential by place of residence indicates that survival chances vary between people living in different environments.

age of five. It is composed of several periods, including the first year of life, which is measured by the infant mortality rate. Therefore, the infant mortality rate is a component of the under-five mortality rate. The second statement is false because the under-five mortality rate includes all deaths occurring before age five, not just those that happen between the ages of one and five.

232. (B) Implementing a nationwide immunization program.
A direct public intervention to reduce mortality involves implementing specific actions that have a physical impact on health outcomes. A prime example is the establishment of a nationwide immunization program. By providing vaccines to a large portion of the population, these programs directly prevent the occurrence and spread of life-threatening infectious diseases, thereby lowering the death rate. This is distinct from analytical tasks like calculating rates or studying trends, which are essential for planning but do not physically intervene.

233. (D) 1, 2, 3, and 4
Infant mortality can result from a diverse range of causes that originate at different stages. Some deaths are due to biological factors and complications during pregnancy or birth, such as congenital abnormalities and low birth weight. Others are caused by infectious diseases contracted from the external environment after birth, including pneumonia and various diarrheal diseases. Together, all these factors contribute to the overall infant mortality rate, highlighting the need for comprehensive healthcare strategies that address both prenatal development and the postnatal environment.

234. (A) To ensure that the extra years of life are healthy years, not years primarily spent in a state of sickness and disability.
As life expectancy increases in a population, it is critical to also measure disability-free life expectancy to understand the nature of those additional years. This dual analysis helps determine if the extra years of life are being lived in good health or if people are instead spending a larger portion of their lives in a state of sickness and disability. Ensuring that the increase in lifespan is accompanied by an increase in healthy, active years is a major goal.

235. (C) Maternal mortality
Emergency obstetric care is a critical component of maternal health services because it provides the necessary interventions to manage life-threatening complications that can occur during childbirth. While routine prenatal care is important, many obstetric emergencies are unpredictable and require immediate medical or surgical response. By ensuring that women have access to this specialized care, healthcare systems can significantly reduce the risk of maternal mortality. This focus is a primary strategy for improving the safety of reproduction and protecting maternal lives.

236. (A) Both A and R are true and R is the correct explanation of A.
The measurement of morbidity is often significantly more complex than the measurement of mortality. This is because death is a discrete, final, and clearly defined event that is relatively easy to record. In contrast, morbidity is a subjective state of ill-health that can vary in severity and duration. Furthermore, many illnesses may go unreported or undiagnosed, making them difficult to track accurately. Both the assertion and the reason are true, with the reason correctly explaining why mortality statistics are often more comprehensive.

237. (B) The hypothetical starting population, usually 100,000.
In the construction of a life table, the term 'radix' refers to the hypothetical starting population of the cohort. This is usually set at a round number, such as one hundred thousand, to simplify the mathematical calculations of survival and death as the cohort ages. The radix represents the number of births at age zero, and the life table then follows this group until the last member dies, providing the basis for calculating probabilities of death and the resulting life expectancy.

238. (A) Higher infant mortality rates among children born to mothers with no education compared to those with higher education.
A mortality differential by socioeconomic characteristics is demonstrated when survival rates vary significantly between different social or economic groups. A clear example is observing higher infant mortality rates among children born to mothers with no formal education compared

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224. (A) Both A and R are true and R is the correct explanation of A.
Model life tables are indispensable demographic tools, particularly for countries that lack comprehensive and reliable mortality data. They consist of a standardized set of mortality patterns derived from various real-world populations. By using these models, demographers can estimate a complete and scientifically rigorous life table from limited information, such as child mortality rates. Both the assertion and the reason are true, with the reason correctly explaining why these models are so essential for conducting population analysis and health planning today.

225. (C) Incidence rate
To measure the risk of developing a new disease within a population over a specific period, the most appropriate metric is the incidence rate. Unlike prevalence, which tracks all existing cases, incidence focuses specifically on newly diagnosed individuals. By relating the number of new cases to the total population at risk, this rate provides a direct indication of the probability that a healthy person will contract the condition. This information is critical for evaluating the effectiveness of prevention programs and tracking disease outbreaks.

226. (D) Age-Specific Death Rate
Morbidity measures are used to track illness and disease within a population. Key indicators include the incidence rate for new cases, the prevalence rate for existing cases, and the case-fatality ratio for disease severity. In contrast, the age-specific death rate is a mortality measure. It calculates the frequency of deaths within a particular age group relative to the population of that same group. While it is a highly refined demographic tool, it focuses on fatal outcomes rather than on non-fatal health conditions.

227. (D) 1, 2, 3, 4 and 5
A comprehensive study of reproductive health encompasses a wide array of clinical, social, and rights-based elements. This includes essential medical services like emergency obstetric care and the management of reproductive tract and sexually transmitted infections. It also addresses the specific needs and risks of adolescents, alongside the complex issues surrounding abortion. Furthermore, the framework integrates considerations of reproductive rights and ethics. Together, all these components form a holistic approach to understanding and improving reproductive well-being throughout the entire life cycle.

228. (A) The Health Transition
The long-term progression from a population profile characterized by high mortality and high morbidity from infectious diseases to one with low rates and a dominance of chronic conditions is broadly termed the health transition. This concept encompasses the epidemiological transition and the demographic transition, reflecting fundamental improvements in nutrition, sanitation, and medical technology. As societies undergo this change, the leading health challenges shift toward managing non-communicable diseases and maintaining the quality of life for an increasingly elderly and long-living population.

229. (B) Short duration
The relationship between incidence and prevalence is influenced by the average duration of a disease. Incidence measures the flow of new cases, while prevalence measures the total number of existing cases. If a disease has a high incidence but a low prevalence, it implies that the disease has a short duration. This occurs when patients either recover quickly or, unfortunately, die soon after contracting the illness. In both scenarios, individuals do not remain in the "diseased" state for a long period of time.

230. (B) P-4, Q-2, R-3, S-1
Different demographic terms are used in specific fields of study to evaluate population well-being. The infant mortality rate serves as a key mortality indicator for child survival. The International Classification of Diseases is a standardized system for cause-of-death statistics. The burden of disease is a sophisticated framework used for measuring overall health status. Finally, the model life table is a tool specifically used for estimation techniques in demography, especially when empirical data for a population is missing or defective.

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231. (C) Statement I is true, but Statement II is false.
The under-five mortality rate is a comprehensive indicator of child survival from birth until the

accidents, and nutritional deficiencies, all of which are influenced by the socio-economic and environmental conditions of the home.

263. (C) To provide a model that links socioeconomic factors with direct health-influencing variables
The Mosley and Chen Framework for Child Survival provides a structured model that links broad socioeconomic determinants with specific proximate variables. These proximate determinants directly impact the health and survival of children by influencing morbidity risks. This approach allows researchers to understand how social and economic factors are translated into biological outcomes, creating a more holistic view of child mortality.

264. (D) proximate determinants.
Within the Mosley and Chen Framework, factors like environmental contamination and nutrient deficiency are identified as proximate determinants. These variables act as the direct biological pathways through which background socioeconomic factors influence child survival. By focusing on these intermediate variables, public health programs can target specific issues like hygiene and nutrition to effectively reduce the overall risk of mortality.

265. (A) Prematurity at birth
Prematurity at birth is a primary example of an endogenous cause of mortality, as it is a biological condition originating from pregnancy itself. Unlike exogenous factors such as infections or accidents, endogenous causes are linked to the internal development and genetic health of the fetus. Managing these risks requires high-quality medical interventions during pregnancy and the immediate period following delivery.

266. (B) To enable comparison between populations by removing the effect of age structure
Standardization techniques are primarily used to enable accurate mortality comparisons between populations that have different age compositions. By removing the confounding effect of age, these methods allow researchers to isolate other factors influencing health. This ensures that a population with many elderly people is not unfairly characterized as less healthy than a younger population simply because of its demographic distribution.

267. (B) The confounding effect of the different age distributions
Comparing mortality between an aging population and a young population is challenging because age itself is a major risk factor for death. Standardization addresses the confounding effect of these different age distributions by applying a consistent structure to both sets of data. This allows for a fair assessment of the underlying mortality levels, independent of the demographic profiles of the groups.

268. (A) When age-specific death rates for the study population are not available
Indirect standardization is the preferred method when the age-specific death rates for the study population are either unavailable or considered unreliable due to small sample sizes. Instead of using the study's own rates, this method applies the rates from a standard population to the study's age structure. It helps researchers estimate expected deaths even when detailed local data is missing.

269. (C) The complete registration of both births and infant deaths
The accuracy of the Infant Mortality Rate is highly dependent on the complete and accurate registration of both live births and infant deaths. If either of these events is under-reported, the resulting rate will be skewed and fail to reflect the true mortality risk. High-quality vital registration systems are therefore essential for providing reliable data for public health planning and evaluation.

270. (D) A standard population's age structure to the study population's age-specific death rates
Direct standardization involves applying the age-specific death rates of the study population to the age structure of a designated standard population. This process generates an age-adjusted death rate, which represents what the mortality level would be if the study population had the same age distribution as the standard. It provides a single summary measure that is comparable across regions.

271. (C) The hypothetical cohort experiences the observed mortality rates of a specific period.
A period life table is constructed under the assumption that a hypothetical cohort of

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to those born to mothers with higher levels of education. This variation highlights how social factors, such as knowledge, health behaviors, and economic resources, influence a family's ability to protect the health of their children and access necessary medical services.

239. (A) 1, 2 and 4 only
Evaluating mortality data requires an understanding of several key principles. The quality of this data is fundamentally dependent on the completeness of the vital registration system. One of the main limitations of the crude death rate is its sensitivity to the population's age structure, making it unsuitable for direct comparisons. Furthermore, the infant mortality rate is a highly sensitive and widely used indicator of socioeconomic and health development. Statements one, two, and four correctly reflect these important demographic and public health concepts.

240. (B) The international women's health and rights movements.
The evolution of the concept of reproductive health from a narrow focus on family planning to a broader, holistic framework was a significant shift in public health. This process was profoundly influenced by the international women's health and rights movements, especially during major global conferences in the nineteen-nineties. These movements advocated for a rights-based approach that emphasizes individual autonomy, informed choice, and the integration of diverse health services, moving beyond simple population control to prioritize overall well-being.

241. (A) Chronic, non-communicable diseases like heart disease, cancer, and diabetes.
In countries that have reached the final stage of the epidemiological transition, the leading causes of death have undergone a fundamental shift. Infectious diseases, pandemics, and famine-related mortality have been largely controlled through public health and medical advancements. As a result, the primary health challenges are now chronic, non-communicable, and degenerative conditions. These include heart disease, cancer, and diabetes, which are more prevalent among the increasingly elderly population. This pattern reflects a society where survival into old age is common.

242. (B) 2, 3, 1
Infant mortality is divided into distinct periods based on the timing of death during the first year of life. The sequence begins immediately after a live birth with the early neonatal period, which covers the first seven days. This is followed by the late neonatal period, which spans from seven to twenty-eight days. Finally, the post-neonatal period encompasses the remainder of the first year until the child reaches their first birthday. Therefore, the correct chronological sequence for these mortality phases is two, then three, and finally one.

243. (A) Mortality refers to death, while morbidity refers to illness or disease.
Mortality and morbidity are two central concepts used to evaluate the health of a population, and the fundamental difference between them lies in the outcomes they measure. Mortality refers specifically to the occurrence of death. In contrast, morbidity refers to the state of being unhealthy, diseased, or injured. While they are related, they provide different insights: mortality rates track survival, while morbidity rates track the incidence and prevalence of illnesses. Understanding both is essential for a comprehensive assessment of overall health status.

244. (C) The Age-Standardized Death Rate for each country.
To compare the overall mortality level of two countries while removing the confounding influence of their different age structures, the best indicator to use is the age-standardized death rate. Unlike the crude death rate, which is heavily affected by the proportion of elderly people in a population, standardized rates apply a single, common age distribution to both groups. This adjustment allows for a fair comparison, ensuring that any observed differences in mortality levels reflect actual variations in health conditions rather than age.

245. (A) P-3, Q-1, R-4, S-2
Different frameworks and tools in public health serve specific analytical purposes. The International Classification of Diseases is a standardized system for coding health conditions. The Mosley and Chen framework is used to analyze the complex determinants of child survival. Model life tables are indispensable

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for estimating mortality patterns when empirical data for a population is missing or defective. Finally, the burden of disease concept, measured through disability-adjusted life years, allows for the integrated assessment of mortality and disability in a single indicator.

246. (C) Statement I is true, but Statement II is false.
Life expectancy at birth is a powerful summary measure that represents the overall mortality levels currently experienced by a population. It serves as a benchmark for comparing health and survival across different groups and time periods. While an increase in life expectancy generally reflects improved health conditions and lower mortality, it does not directly indicate a decrease in the prevalence of chronic diseases. In fact, as people live longer, the prevalence of these conditions often increases. Therefore, the first statement is true.

247. (A) Maternal Mortality - Death of a woman due to complications of childbirth.
Accuracy in terminology is essential for effective demographic and public health analysis. Maternal mortality is correctly defined as the death of a woman resulting from complications during pregnancy, childbirth, or the postpartum period. Other definitions provided are incorrect: a stillbirth is a fetal death, not an infant death at ten days; the incidence rate measures new cases rather than all existing ones; and the crude death rate is a simple measure that is highly sensitive to the age structure.

248. (C) 2, 3, and 4 only
Mortality indicators are classified by their scope and specificity. The crude death rate is a broad measure that applies to the entire population at once. In contrast, several other indicators focus on specific demographic groups or phases of life. These include the age-specific death rate, the infant mortality rate for those under one year, and the maternal mortality rate for women during the reproductive process. Therefore, these three measures are specifically designed to analyze mortality risks within restricted demographic segments rather than the overall population.

249. (A) The absence of reliable and complete age-specific mortality data in many populations.
The necessity for model life tables in demography arises from the reality that many populations lack complete and reliable empirical mortality data. In many regions, vital registration systems are either non-existent or fail to record every birth and death accurately. Model life tables provide a set of scientifically derived, standardized mortality patterns that allow researchers to estimate a full life table based on limited known information, such as child mortality rates. This makes them an essential tool for conducting population analysis.

250. (A) By States/UTs
India is a diverse nation where demographic and epidemiological transitions occur at varying speeds across the country. It is essential to study the burden of disease at the level of individual states and Union Territories. National averages often mask significant variations in health challenges and socioeconomic conditions. This state-level analysis is crucial for developing targeted health policies, allocating resources effectively, and addressing the specific needs of diverse populations across different regions.

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251. (B) Abortion
Abortion is specifically defined as the induced termination of a pregnancy, distinguishing it from spontaneous events like miscarriage. This medical or surgical procedure involves the deliberate removal of the product of conception. It is a critical component of pregnancy wastage studies, as it represents a significant medical event that impacts maternal health outcomes and demographic data.

252. (A) The presence of any sign of life after expulsion
A live birth is characterized by the complete separation of the product of conception from the mother, followed by signs of life such as breathing or a heartbeat. Conversely, fetal death is the absence of such signs before expulsion. This distinction relies solely on observable vital signs post-separation, regardless of the gestational age or duration of the pregnancy.

253. (C) Late neo-natal death
Mortality occurring between the 7th and 28th day following a live birth is classified as late neo-natal death. This category distinguishes deaths

occurring in the first week from those later in the first month. Such classifications help researchers identify specific health risks and the efficacy of medical care provided during the different stages of the early infant life cycle.

254. (D) Miscarriage, abortion, fetal death, and stillbirth
Pregnancy wastage is a comprehensive term that includes all events where a pregnancy does not result in a live birth. This includes miscarriage, which is spontaneous loss, and abortion, which is induced. It also encompasses fetal deaths and stillbirths occurring at later gestational ages. Understanding these components is essential for evaluating reproductive health and the overall quality of prenatal care.

255. (C) Death occurring within the first year of life
An infant death is defined as any mortality event occurring within the first year of life, from the moment of birth up to the 365th day. This indicator is a vital sign of a population's general health status. It captures both neonatal and post-neonatal deaths, providing a broad measure of the environmental and biological challenges faced by the youngest children.

256. (B) It does not consider the population's age composition.
The Crude Death Rate provides a general overview of mortality but fails to account for the age structure of a population. Because mortality risks vary significantly with age, populations with older distributions will naturally have higher crude rates. This limitation makes it difficult to compare the underlying health conditions of different regions without first adjusting for these demographic variations.

257. (D) Post-natal Mortality Rate
The Post-natal Mortality Rate focuses on deaths occurring from the 28th day of life up to the completion of the first year. This measure isolates mortality risks that are typically environmental or exogenous, such as infections and nutrition. It serves as a distinct indicator from neonatal mortality, which is more often linked to biological factors and delivery complications.

258. (A) calculating mortality for specific age categories within a population.
The Age-Specific Death Rate enhances mortality analysis by calculating the number of deaths within narrow age intervals per 1,000 individuals in those specific groups. This refinement allows demographers to see exactly where mortality risks are highest. By breaking down the data by age, it avoids the distortions found in crude rates and provides a clearer picture of health.

259. (C) IMR is per 1,000 live births, while MMR is per 100,000 live births.
The Infant Mortality Rate is calculated using a denominator of 1,000 live births to reflect the risk of early childhood death. In contrast, the Maternal Mortality Rate measures the risk of death among women due to pregnancy-related causes per 100,000 live births. These different scales are used because maternal deaths are statistically rarer events compared to the frequency of infant deaths.

260. (A) Under-five Mortality Rate
The Under-five Mortality Rate is the most appropriate indicator for assessing the overall survival risk of children from birth until their fifth birthday. It provides a comprehensive view of child well-being by including both infant deaths and deaths among children aged one to four. This metric is widely used by international organizations to track progress in global health initiatives.

261. (D) Endogenous causes
Endogenous causes of mortality are biological or congenital factors related to the circumstances of pregnancy and birth, such as prematurity or birth injuries. These factors are most prominent during the neonatal period, immediately following birth. Understanding these causes helps health professionals improve prenatal care and obstetric practices to reduce mortality risks that are inherent to the infant's physical development.

262. (B) an exogenous cause.
A death resulting from an environmental factor, such as a respiratory infection caused by poor sanitation, is classified as an exogenous cause. These causes are external to the infant and become more significant after the initial neonatal period. They include infectious diseases,

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of the virus, providing critical information for emergency response planning and the allocation of medical resources during a crisis.

281. (A) From a narrow focus on family planning to a comprehensive well-being and rights-based approach
The concept of reproductive health has transitioned from a narrow emphasis on family planning to a comprehensive, rights-based approach. This modern framework views reproductive health as a state of complete physical, mental, and social well-being throughout the entire life cycle. It now encompasses diverse issues like maternal care, adolescent health, and the right to make informed personal reproductive decisions.

282. (B) Ensuring access to Emergency Obstetric Care (EmOC)
Ensuring access to Emergency Obstetric Care is a fundamental strategy for reducing maternal morbidity and mortality. Most maternal deaths and disabilities occur due to unforeseen complications during pregnancy or childbirth that require immediate medical intervention. By providing specialized care at birth, health systems can effectively manage these emergencies and significantly improve health outcomes for mothers and their newborns.

283. (B) A holistic state of physical, mental, and social well-being
The modern definition of reproductive health emphasizes a holistic state of physical, mental, and social well-being, rather than merely the absence of infirmity. This approach recognizes that reproductive health is influenced by social factors and individual rights. It requires healthcare systems to provide comprehensive services that support the overall health and autonomy of individuals in all reproductive matters.

284. (A) Because adolescents face unique health challenges distinct from adults
Adolescent reproductive morbidity is highlighted as a specific concern because young people face unique biological, social, and psychological challenges that differ from those of adults. Their health needs are often neglected in general maternal health programs. Addressing these unique issues, such as early pregnancy and specific infection risks, is essential for ensuring the long-term health and well-being of this group.

285. (C) unsafe abortions are a significant cause of maternal death and illness.
Including abortion-related issues in the reproductive health framework is justified because unsafe abortions are a major contributor to maternal mortality and morbidity worldwide. When access to safe services is restricted, women often resort to dangerous methods that lead to severe health complications. Addressing this issue within public health policy is necessary to protect women's lives and improve overall health outcomes.

286. (D) STIs are exclusively transmitted sexually, while the definition of RTIs is broader.
The primary distinction between Reproductive Tract Infections and Sexually Transmitted Infections lies in their mode of transmission and scope. While all STIs are transmitted through sexual contact, RTIs is a broader category that includes both sexually transmitted infections and those that occur naturally. Understanding this difference is important for developing appropriate prevention, screening, and treatment strategies for all patients.

287. (C) Infertility
Untreated reproductive tract and sexually transmitted infections can lead to serious long-term health consequences, most notably infertility. Other complications include chronic pelvic pain and an increased risk of ectopic pregnancies. These outcomes highlight the importance of early detection and effective treatment to prevent permanent damage to the reproductive system and to ensure the future health and well-being of affected individuals.

288. (B) Demographic, social, and economic domains
The impact of HIV/AIDS extends far beyond individual physical health, affecting the demographic, social, and economic stability of entire communities. It can lead to changes in population structure, increased poverty, and the disruption of social networks. Addressing the epidemic requires a multifaceted response that considers these broader societal implications

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newborns will experience the age-specific mortality rates observed in a real population during a specific timeframe. It treats the cohort as a closed group affected only by these current risks. This allows demographers to summarize the mortality experience of a single year as a lifelong journey.

272. (B) A cohort life table
A cohort life table, also known as a generation life table, tracks the actual mortality experience of a group of individuals born in the same year until the last member dies. This provides a historical record of the risks faced by that specific group over their entire lifespan. It differs from a period life table, which uses cross-sectional data from a single point.

273. (D) When empirical mortality data for a population is lacking or of poor quality
Model Life Tables are essential tools used in demographic analysis when empirical mortality data for a specific population is either completely missing or of very poor quality. These tables provide established patterns of mortality based on historical data from other countries. They allow researchers to estimate life expectancy and survival probabilities in regions where traditional vital registration systems are not functional.

274. (A) an abridged life table.
An abridged life table is one that presents mortality data and life expectancy estimates for specific age intervals, such as five-year blocks, rather than for every single year of life. This format is often used to simplify the presentation of data or when detailed single-year information is unavailable. It remains a powerful tool for summarizing general mortality patterns.

275. (C) summarize the mortality pattern of a population.
The core function of a life table is to provide a concise summary of the mortality pattern within a population by tracing the attrition of a hypothetical cohort. It translates age-specific mortality rates into understandable measures like life expectancy and survival probability. This summary is fundamental for comparing health levels across different time periods and regions, aiding in long-term planning.

276. (A) Incidence
The report of 200 new cases of influenza in a city over a specific month is a measure of the disease's incidence. Incidence focuses strictly on the occurrence of new cases within a defined population and period. This metric is crucial for understanding the current risk of contracting an illness and for monitoring the initial spread of outbreaks in a community.

277. (D) Incidence counts only new cases over a period, while prevalence counts all existing cases.
The primary distinction between incidence and prevalence lies in the timing and status of the cases being counted. Incidence refers to the number of new cases of a disease that develop over a specific period, reflecting the risk of infection. Prevalence encompasses all existing cases, both new and old, at a specific point in time, reflecting the total burden.

278. (B) The disease has a short duration (i.e., people recover quickly or die).
If a disease exhibits high incidence but low prevalence, it implies that the disease has a very short duration. This occurs when individuals either recover quickly or pass away shortly after contracting the illness. Because people do not remain in the diseased state for long, the total number of existing cases at any given time remains low despite many new infections.

279. (C) a dominance of infectious diseases to a dominance of non-communicable diseases.
The epidemiological transition describes a long-term shift in the health patterns of a population. This shift is characterized by a decline in the dominance of infectious and parasitic diseases and a corresponding rise in chronic, non-communicable diseases. This transition typically accompanies economic development and improvements in public health, leading to changes in the primary causes of death and disability.

280. (D) The case-fatality ratio
To determine the severity of a sudden viral outbreak, public health officials calculate the case-fatality ratio. This indicator measures the proportion of individuals diagnosed with the disease who subsequently die from it. A high ratio indicates a more lethal or severe strain

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Specifically, it means that mortality rates differ between urban and rural populations. This variation is often driven by disparities in socioeconomic conditions, nutritional standards, and the availability of healthcare infrastructure and services. Understanding these geographical differences is essential for developing targeted public health policies that address the unique challenges faced by communities in cities and rural areas.

218. (A) P-4, Q-3, R-1, S-2
Different mortality indicators provide specialized insights into population health. The infant mortality rate tracks child survival during the first year of life. The maternal mortality rate specifically measures the risk of death associated with pregnancy and childbirth complications. The crude death rate offers a broad overview of overall mortality but is influenced by the age structure. Finally, the age-specific death rate is a refined measure that indicates the mortality risk for a particular age group, allowing for detailed analysis of patterns.

219. (A) Both Statement I and Statement II are true.
Standardization techniques are essential for comparing mortality between populations with different age distributions. Indirect standardization is a specific procedure used when the age-specific death rates of the study population are either unavailable or considered unreliable. This technique involves applying the age-specific death rates from a standard population to the actual age structure of the study population. Both statements correctly describe the purpose and the methodology of this important demographic tool, which helps researchers make fair and accurate comparisons even with limited data.

220. (C) It is synonymous with maternal health only.
Reproductive health is a holistic and comprehensive concept that has evolved significantly over time. It incorporates much more than just the health of mothers, as it also addresses adolescent reproductive morbidity and the management of sexually transmitted infections, including HIV and AIDS. Furthermore, it encompasses individual rights and informed decision-making. Therefore, claiming that reproductive health is synonymous only with maternal health is incorrect, as this narrow view fails to capture the broad scope and life-cycle approach of the framework.

221. (D) 1, 2, 3 and 4
The significant reduction in mortality rates within many developing countries is the result of several interrelated factors. Improving environmental sanitation and hygiene has reduced the spread of infectious diseases. Medical breakthroughs, specifically the discovery and widespread use of antibiotics and the development of effective vaccines, have also played a critical role. Furthermore, social advancements, such as increased female literacy and better nutritional standards, have enhanced the overall health environment. Together, all these elements have contributed to the remarkable mortality decline.

222. (B) The classification of deaths by the underlying disease or injury that caused them.
The term "causes of death statistics" refers to the systematic classification of deaths according to the underlying diseases or injuries that initiated the sequence of events leading to mortality. This data is essential for epidemiological analysis, as it allows researchers to identify which health conditions represent the greatest threats to a population. By using standardized systems like the International Classification of Diseases, health officials can track trends, prioritize medical interventions, and allocate resources to address the most significant health challenges.

223. (B) DFLE provides information on the quality of life, not just its length.
While standard life expectancy measures the total number of years an individual is expected to live, it provides no information about the quality of those years. The key advantage of using disability-free life expectancy is that it integrates health status into the calculation. By focusing on the average number of years spent in good health without significant functional limitations, this indicator provides a more complete picture of well-being. It helps policymakers determine if people are living healthier lives or surviving longer with conditions.

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alongside medical treatment and prevention efforts to support the most vulnerable.

289. (D) The confidentiality of testing and stigma against patients
In the context of STIs and HIV, reproductive rights and ethical issues are most directly concerned with the confidentiality of testing and the social stigma faced by patients. Protecting individual privacy and preventing discrimination are essential for encouraging people to seek diagnosis and care. Ethical frameworks ensure that medical interventions respect human dignity and promote equitable access to life-saving treatments.

290. (A) The protection of human rights
A comprehensive approach to managing RTIs, STIs, and HIV/AIDS must integrate medical interventions with the protection of human rights. Protecting rights helps to reduce social vulnerability and the stigma that often prevents individuals from accessing healthcare services. This holistic strategy combines clinical care with advocacy for equality and confidentiality, creating an environment where prevention and treatment programs are effective.

291. (C) To offer a standardized system for classifying and coding causes of death
The International Classification of Diseases provides a standardized global system for classifying and coding causes of death and morbidity. This tool ensures that health data is recorded consistently across different countries and regions, allowing for meaningful comparisons and epidemiological analysis. It is essential for health management, as it helps authorities identify trends, allocate resources, and monitor health policies.

292. (A) It differs significantly by age.
The distribution of the main causes of death within a population varies significantly according to age group. Infectious diseases and neonatal conditions are typically more prominent among children, whereas chronic, non-communicable diseases like heart disease and cancer dominate in older populations. Understanding these age-related patterns is crucial for designing targeted health interventions and improving the overall life expectancy of a population.

293. (D) Verbal autopsy
In regions where medical certification of death is not common, a verbal autopsy may be used to determine the likely cause of death. This method involves interviewing family members about the signs and symptoms experienced by the deceased before their passing. Trained professionals then use this information to assign a probable cause, providing valuable data for public health planning.

294. (B) the prevalence of certain causes of premature death.
A country's overall life expectancy is significantly influenced by the prevalence of certain causes of premature death. When a large number of deaths occur at young ages, such as from infectious diseases or accidents, the average lifespan of the population is substantially lowered. Public health efforts aimed at reducing these specific causes can lead to rapid and significant improvements in longevity.

295. (C) It allows for consistent and comparable reporting of mortality data across different regions.
Standardized systems like the ICD are vital for causes of death statistics because they allow for the consistent and comparable reporting of mortality data across diverse regions. Without a common language for coding diseases, it would be impossible to accurately compare health trends between different countries. This consistency is essential for global health surveillance and for understanding various diseases.

296. (D) To account for both death and the impact of illness and disability
Studying the burden of disease is necessary because it provides a more comprehensive view of public health by accounting for both mortality and the impact of disability. While death rates measure life lost, they do not capture the years people spend living in poor health. Measuring the total health loss allows for an accurate assessment of population health.

297. (A) The average number of years an individual is expected to live in a healthy state
Disability-free life expectancy estimates the average number of years a person is expected to live in a healthy state, without being limited

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(C) 2, 4, 1, 3
(D) 3, 1, 4, 2

41. Which statement correctly defines a 'refugee' according to international conventions?
(A) Any person who moves to another country for economic betterment.
(B) An individual displaced within their own country due to natural disaster.
(C) A person who has crossed an international border owing to a well-founded fear of being persecuted.
(D) A person who voluntarily returns to their home country after a period abroad.

42. The growth of cities in core countries at the expense of resource extraction and labor from periphery countries is a central tenet of which migration theory?
(A) World System Theory
(B) Social Network Theory
(C) Duel Labour Market Theory
(D) Zelinsky's Mobility Transition

43. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Social networks significantly lower the costs and risks of migration.
Reason (R): Prospective migrants can rely on relatives and friends in the destination for information, financial assistance, and help in finding housing and employment.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

44. What is the 'K=7 principle' in Christaller's Central Place Theory known as?
(A) The marketing principle
(B) The administrative principle
(C) The central business principle
(D) The transport principle

45. Which method is most suitable for estimating net migration for a sub-national area (like a state) when reliable vital statistics are available?
(A) National Growth Rate Method
(B) Census Survival Ratio Method
(C) Vital Statistics Method
(D) Place of Last Residence data only

46. Consider the following statements about the concept of a 'Smart City':
1. It primarily focuses on reducing the city's population.
2. It involves the integration of information and communication technology (ICT).
3. A key goal is to improve the quality of life for citizens.
4. Sustainability and environmental protection are core components.
5. It aims to enhance the efficiency of urban services and governance.

Which of the above statement(s) is/are correct?
(A) 1, 2 and 3 only
(B) 2, 3, 4 and 5 only
(C) 1, 4 and 5 only
(D) 1, 2, 3, 4 and 5

47. 'Cumulative Causation Theory', as applied to migration, suggests that:
(A) The act of migration changes the social context at both origin and destination, making future migration more likely.
(B) Each act of migration is an independent event with no impact on future flows.
(C) Migration flows tend to cease after reaching a certain saturation point.
(D) Migration is caused by a single, cumulative factor like wage difference.

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48. Identify the correctly matched pair of urbanization concept and its description.
(A) Urban Morphology - The process of urban growth.
(B) Spatial Organisation - The arrangement of and relationship between elements in an urban area.
(C) Land Use Pattern - The internal physical structure of a city.
(D) Centrality - The way activities are arranged in space within a city.

49. Given below are two statements:
Statement I: The Lewis-Fei-Ranis model is a dual-sector model that explains migration from a surplus-labor agricultural sector to a growing industrial sector.

CHAPTER 06
Urbanization and Migration

1. What is the primary criterion used in the Indian census to define a 'Census Town'?
(A) A threshold requiring a minimum total population of 50,000 residents.
(B) At least 75% of the male main working population engaged in non-agricultural pursuits.
(C) Having a registered municipality, corporation, cantonment board, or notified town committee.
(D) A population density of at least 1,000 persons per sq. km across the entire region.

2. Which of the following is a primary source of data for studying urbanization in India?
(A) Census of India
(B) National Sample Survey (NSS)
(C) Civil Registration System (CRS)
(D) Sample Registration System (SRS)

3. Given below are two statements:
Statement I: The process of urbanization involves an increase in the proportion of a country's population living in urban areas.
Statement II: Urban growth refers to the absolute increase in the number of people living in urban areas.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

4. Match List I with List II.
List I: (Concept)
P. Morphology
Q. Centrality
R. Hierarchy
S. Function
List II: (Description)
1. The ranking of settlements based on size or importance.
2. The internal structure and physical layout of a city.
3. The dominant economic or administrative activity of a settlement.
4. The degree to which a settlement serves its surrounding area.
Codes:
(A) P-2, Q-4, R-1, S-3
(B) P-1, Q-2, R-3, S-4
(C) P-2, Q-1, R-4, S-3
(D) P-3, Q-4, R-1, S-2

5. Which of the following statements regarding the characteristics of a 'primate city' is incorrect?
(A) It is significantly larger than any other city in the country.
(B) It often dominates the country's economic, political, and cultural life.
(C) The presence of a primate city is always an indicator of a well-balanced urban system.
(D) It is typically more than twice the size of the next largest city.

6. A country has cities with populations of 10 million, 5 million, 3.3 million, and 2.5 million. This distribution closely follows which principle?
(A) The primate city rule
(B) The rank-size rule
(C) The cycle of urbanization
(D) The central place theory

7. What is a primary cause of rapid urbanization in many developing countries?
(A) National government policies promoting rural development and decentralization exclusively.
(B) A sharp decline in urban employment opportunities and industrial sector growth.
(C) The saturation of urban infrastructure and social services in metropolitan areas.

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(D) Decreasing agricultural productivity and rural distress.

8. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The informal sector plays a significant role in the economies of cities in developing countries.
Reason (R): Formal employment opportunities are often insufficient to absorb the large influx of migrants from rural areas.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

9. What is the most appropriate description of the 'cycle of urbanization'?
(A) The daily or weekly movement of people between cities and peripheral zones.
(B) The regular expansion and contraction of city boundaries based on seasonal shifts.
(C) The historical sequence of urban growth, suburbanization, counter-urbanization, and re-urbanization.
(D) The process of cities competing with each other for regional economic dominance.

10. Which of the following statements correctly describes Walter Christaller's Central Place Theory?
(A) It proposes a hierarchical arrangement of settlements based on the provision of goods and services.
(B) It explains the formation of linear city patterns along transport routes.
(C) It focuses on the industrial location choices of firms.
(D) It describes the internal social structure of cities.

11. All of the following are considered negative environmental consequences of rapid urbanization EXCEPT:
(A) Increased air and water pollution.
(B) Creation of urban heat islands.
(C) Loss of agricultural land and biodiversity.
(D) Increased efficiency in public transport systems.

12. Consider the following statements regarding the concept of a 'World City':
1. They are command and control centers of the global economy.
2. Their hierarchy is primarily determined by population size.
3. They house major institutions of global capital like stock exchanges.
4. They are characterized by a high concentration of advanced producer services.

Which of the above statement(s) is/are correct?
(A) 1 and 2 only
(B) 2 and 4 only
(C) 1, 3 and 4 only
(D) 1, 2, 3 and 4

13. In the context of migration, what does 'circulation' refer to?
(A) Permanent change of residence from one sovereign country to another location.
(B) The specific one-time movement from a rural village to a metropolitan area.
(C) Repetitive, short-term, and cyclical movements without a declared change of residence.
(D) The involuntary displacement of people due to political conflict or natural disasters.

14. Who proposed the 'Laws of Migration', which are considered one of the earliest systematic attempts to explain migration patterns?
(A) Everett Lee
(B) Michael Todaro
(C) W. Arthur Lewis
(D) E.G. Ravenstein

15. Identify the correctly matched pair of migration theory and its core concept.
(A) Lewis-Fei-Ranis Model - Dual Economy with a modern and a traditional sector
(B) Todaro Model - Migration driven by intervening opportunities in the job market
(C) Stouffer's Theory - Migration based on expected income differential over time
(D) Neoclassical Theory - Migration facilitated primarily through social networks

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16. Arrange the following stages of the 'cycle of urbanization' in their correct chronological sequence:
1. Counter-urbanization
2. Suburbanization
3. Re-urbanization
4. Urbanization

(A) 4, 1, 2, 3
(B) 4, 2, 1, 3
(C) 2, 4, 1, 3
(D) 1, 2, 3, 4

17. Given below are two statements:
Statement I: The Census of India provides data on migration based on 'place of birth' and 'place of last residence'.
Statement II: These two concepts yield identical estimates of the migrant population.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

18. Identify the incorrectly matched pair.
(A) Circulation - The process of becoming a refugee.
(B) Commutation - Daily travel to a place of work or study.
(C) Mobility - The general capacity for movement.
(D) Migration - A permanent or semi-permanent change of residence.

19. Which of the following is the best example of 'commutation'?
(A) A farmer moving to a city permanently for a new industrial job.
(B) A student from Bihar moving to Delhi for a four-year university degree.
(C) A software engineer living in Noida and travelling to Gurugram every day.
(D) A seasonal agricultural worker moving to Punjab for the harvest season.

20. Match List I with List II.
List I: (Migration Theory)
P. Push-Pull Theory
Q. Mobility Transition Model
R. Intervening Opportunities
S. Laws of Migration
List II: (Proponent)
1. Wilbur Zelinsky
2. Samuel Stouffer
3. E.G. Ravenstein
4. Everett Lee

Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-1, R-2, S-3
(C) P-3, Q-4, R-1, S-2
(D) P-4, Q-2, R-1, S-3

21. What is meant by 'inter-censal migration'?
(A) Migration that occurs within a single census enumeration block.
(B) The total number of people who have ever migrated in their lifetime.
(C) Migration that is estimated to have occurred between two consecutive census dates.
(D) Migration data that is corrected for census undercounting.

22. A person born in Village A, moved to Town B for education, and at the time of the census, was living in City C for work. According to the 'place of last residence' concept, where is this person a migrant from?
(A) Village A
(B) Town B
(C) City C
(D) Cannot be determined

23. The Vital Statistics Method for estimating net internal migration relies on all of the following components EXCEPT:
(A) Population count at the beginning of the period.
(B) Population count at the end of the period.
(C) Number of births during the period.
(D) Number of marriages during the period.

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24. Consider the following factors related to migration decisions:
1. Personal factors
2. Push factors at origin
3. Pull factors at destination
4. Intervening obstacles
5. Socio-cultural norms

Which of the above statement(s) is/are correct

migration.
(C) Migration is a key demographic component driving the process of urbanization.
(D) Urbanization has led to a complete stop in rural-to-urban migration.

58. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Institutions of global capital, such as multinational corporation headquarters and major stock exchanges, tend to concentrate in a few 'World Cities'.
Reason (R): These cities provide the necessary infrastructure, specialized services, and access to information required for managing global economic operations.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

59. Given below are two statements:
Statement I: The 'K=4 principle' in Christaller's Central Place Theory is also known as the transport principle.
Statement II: In this principle, a central place serves its own population, plus half of the population of six surrounding lower-order settlements.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

60. According to Ravenstein's "Laws of Migration," all of the following are general characteristics of migrants EXCEPT:
(A) Most migrants move only a short distance.
(B) Families are more likely to make international moves than young, single adults.
(C) Migrants moving long distances generally go to major centers of commerce or industry.
(D) Each main current of migration produces a compensating counter-current.

61. Which of the following statements about the Life Table Survival Ratio (LTSR) method is correct?
(A) It assumes that the mortality rates of the nation as a whole apply to the sub-region being studied.
(B) It is a direct method of migration estimation.
(C) It assumes that the mortality rates of the nation as a whole apply to the sub-region being studied.
(D) It requires precise data on the number of in-migrants and out-migrants.

62. Arrange the following urban settlement classifications in ascending order of their typical population size:
1. Megacity
2. Metropolis
3. City
4. Town

(A) 4, 3, 2, 1
(B) 3, 4, 1, 2
(C) 4, 3, 1, 2
(D) 3, 4, 2, 1

63. The concept of the 'urban informal sector' was first systematically discussed in a report on which country?
(A) Kenya
(B) India
(C) Brazil
(D) Nigeria

64. A large number of skilled IT professionals migrating from India to the USA is an example of:
(A) Brain Gain
(B) Brain Drain
(C) Brain Circulation
(D) Brain Waste

65. Consider the following as potential consequences of urbanization in developing countries:
1. Strain on basic amenities like water and sanitation.
2. Growth of slums and informal settlements.
3. Increased opportunities for employment, both formal and informal.
4. Better access to higher education and specialized healthcare.

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(A) 1 and 2 only
(B) 2 and 4 only
(C) 1, 3 and 4 only
(D) 1, 2 and 3 only

33. Which theory posits that migration is a response to labor demand in segmented labor markets, distinguishing between a primary and a secondary sector?
(A) New Household Economic Theory
(B) Dual Labour Market Theory
(C) World System Theory
(D) Neoclassical Economic Theory

34. A family in a rural area decides to send one member to work in a city to earn a stable income and send back remittances, while others continue farming. This strategy, aimed at minimizing household risk, is best explained by which theory?
(A) New Household Economic Theory
(B) Neoclassical Economic Theory
(C) Todaro Expected Income Model
(D) Ravenstein's Migration Laws

35. Which of the following is an incorrect statement regarding the consequences of international migration for the origin country?
(A) It can lead to 'brain drain' if highly skilled workers leave.
(B) Remittances sent by migrants can be a major source of foreign exchange.
(C) It always results in a net economic loss for the origin country.
(D) It can lead to a shortage of young, able-bodied workers in the local labor market.

36. Match List I with List II.
List I: (Term)
P. Rank-size rule
Q. Primate city
R. Counter-urbanization
S. Smart City
List II: (Associated Concept)
1. Movement of population away from large urban areas to smaller towns.
2. Use of technology to improve urban services and sustainability.
3. City that is disproportionately large and dominant.
4. Regular hierarchical distribution of city sizes.
Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-3, R-1, S-2
(C) P-4, Q-1, R-3, S-2
(D) P-2, Q-3, R-1, S-4

37. Given below are two statements:
Statement I: The Census Survival Ratio Method explains net migration by comparing a cohort's size in one census to its expected size in the next census.
Statement II: This method requires accurate data on births and deaths for the region being studied.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

38. In the context of Central Place Theory, what is a 'central place region'?
(A) The specific industrial zone of a major city.
(B) The area exclusively served by a central place for its goods and services.
(C) A residential suburb that depends on the central city.
(D) Any area with a population density above the national average.

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39. All of the following are direct measures for estimating migration EXCEPT:
(A) Lifetime migration rate.
(B) Inter-censal migration rate.
(C) Migration rate based on place of last residence.
(D) National Growth Rate Method.

40. Arrange the following migration theories in the approximate chronological order of their development:
1. Everett Lee's Push-Pull Model
2. Ravenstein's Laws of Migration
3. New Household Economic Theory
4. Todaro's Model
(A) 2, 1, 4, 3
(B) 1, 2, 3, 4

by debilitating illness or injury. This indicator focuses on the quality of life rather than just its total duration. It is an increasingly important metric for health planners, especially in aging populations with rising chronic conditions.

298. (B) Both communicable and non-communicable diseases are major, co-existing problems.
The term dual burden in the Indian health context refers to the simultaneous challenge of high rates of communicable diseases and a rising prevalence of non-communicable diseases. This situation places a significant strain on the healthcare system, as it must address traditional infectious threats while also managing chronic conditions. It reflects a complex stage in the nation's epidemiological transition.

299. (B) Ageing is associated with a higher prevalence of chronic, non-communicable diseases.
Population ageing is closely linked to the burden of disease because older individuals are more likely to suffer from chronic, non-communicable conditions. As the proportion of elderly people in a population grows, the overall health burden shifts toward these long-term illnesses. This demographic change requires health systems to adapt by providing more specialized care and support for managing chronic disease.

300. (A) By incorporating years lived with disability into its calculation
The measure of the burden of disease offers a more holistic picture of public health by incorporating years lived with disability into its calculations. Unlike standard mortality rates that only count deaths, this approach quantifies the total impact of health loss. This allows policy makers to prioritize interventions for diseases that cause significant suffering, even if not fatal.

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Statement II: The model predicts that migration will stop once wages in the urban and rural sectors are equalized.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

50. Match List I with List II.
List I: (Data Source)
P. Census (Place of Birth)
Q. Census (Place of Last Residence)
R. National Sample Survey (NSS)
S. Vital Statistics
List II: (Type of Migration Information)
1. Sample-based data on reasons for migration.
2. Indirect estimation of net migration.
3. Provides data on lifetime migrants.
4. Captures more recent moves compared to place of birth.
Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-1, R-2, S-4
(C) P-3, Q-4, R-1, S-2
(D) P-2, Q-3, R-4, S-1

51. The increasing participation of women in migration streams, particularly in service sector jobs, is referred to as:
(A) The mobility transition.
(B) Brain drain.
(C) The feminization of migration.
(D) Cumulative causation.

52. Zelinsky's 'Mobility Transition' model links changes in migration patterns to which broader process?
(A) The Industrial Revolution
(B) The Agricultural Revolution
(C) The Political Cycle
(D) The Demographic Transition

53. If a country's largest city has a population of 12 million, according to the rank-size rule, what would be the approximate population of the fourth-largest city?
(A) 6 million
(B) 4 million
(C) 3 million
(D) 1.2 million

54. Consider the following characteristics of urbanization in India:
1. The pace of urbanization has been consistently accelerating since 1901.
2. A large proportion of the urban population lives in large cities (Class I cities).
3. There are significant regional disparities in the level of urbanization.
4. The growth of census towns contributed significantly to urbanization in the last decade.
Which of the above statement(s) is/are correct?
(A) 1 and 2 only
(B) 2, 3 and 4 only
(C) 1 and 3 only
(D) 1, 2, 3 and 4

55. Which of the following is an incorrect statement about the sources of urban population data?
(A) Census provides a comprehensive count of the urban population.
(B) National Sample Surveys provide detailed socio-economic characteristics of the urban population.
(C) Sources of data can have limitations in terms of coverage and timeliness.
(D) The Civil Registration System is the primary source for measuring the level of urbanization.

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56. What is meant by 'lifetime migrant' in the context of the Indian Census?
(A) A person whose place of enumeration is different from their place of birth.
(B) A person who has migrated more than once in their life.
(C) A person who intends to stay in the new location for their entire life.
(D) A person who migrated in the year just before the census.

57. Which of the following best describes the 'inter-relationship between urbanization and migration' in developing countries?
(A) They are two independent processes with no connection.
(B) Urbanization primarily causes international

regarding factors explicitly included in Everett Lee's model of migration?
(A) 1, 2, and 3 only
(B) 2, 3, and 4 only
(C) 1, 2, 3, and 4 only
(D) 1, 2, 3, 4 and 5

25. According to the Indian Census, what is the minimum population required for a settlement to be classified as a Statutory Town?
(A) A minimum population threshold of 5,000 residents.
(B) A minimum population threshold of 10,000 residents.
(C) There is no minimum population criterion.
(D) A minimum population threshold of 20,000 residents.

26. Which statement accurately describes the relationship between urbanization and migration in developing countries?
(A) Rural-to-urban migration is a major component of urban growth.
(B) Migration has a negligible impact on the rate of urbanization.
(C) Urban-to-rural migration is the dominant migration stream.
(D) International migration is the primary driver of urbanization.

27. Given below are two statements:
Statement I: The rank-size rule suggests an inverse relationship between the rank of a city and its population size.
Statement II: A country with a primate city perfectly adheres to the rank-size rule.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

28. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): August Lösch's model of central places is considered less rigid than Christaller's.
Reason (R): Lösch allowed for specialized production centers and a more complex, overlapping hierarchy of market areas, creating a richer economic landscape.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

29. The formation of an 'urban heat island' is a direct consequence of:
(A) The high albedo of urban surfaces like managed parks and decorative water bodies.
(B) The high rate of evapotranspiration observed in modern urban areas.
(C) The replacement of natural vegetation with heat-absorbing surfaces like asphalt and concrete.
(D) The prevalence of sustainable green building technologies in city centers.

30. What is the 'K=3 principle' in Christaller's Central Place Theory represent?
(A) The transport principle
(B) The administrative principle
(C) The industrial principle
(D) The marketing principle

31. What is the most significant limitation of using only census data to study migration?
(A) It is only collected every ten years, missing short-term and circular movements.
(B) It does not include specific questions regarding the original place of birth.
(C) The data sets are only available for residents of designated urban areas.
(D) The migration data is not disaggregated by the variables of age or sex.

32. Consider the following statements about the Todaro model of migration:
1. It assumes migrants are rational decision-makers.
2. The decision to migrate is based on the actual urban-rural wage differential.
3. It incorporates the probability of obtaining an urban job.
4. It suggests that migration can continue even in the presence of urban unemployment.

Which of the above statement(s) is/are correct?

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5. Reduction in overall crime rates.

Which of the above statement(s) is/are correct?

(A) 1 and 2 only
(B) 1, 2, 3 and 4 only
(C) 3, 4 and 5 only
(D) 1, 2, 3, 4 and 5

66. What is the 'National Growth Rate Method' of estimating net migration?

(A) A method that assumes a region's population grows at the national rate, with the difference attributed to net migration.
(B) A method that directly counts migrants crossing international borders through official checkpoints.
(C) A method that compares national growth rates to global international growth trends.
(D) A method based solely on the natural increase rate observed at the national level.

67. Identify the correctly matched pair.

(A) Losch - Hexagonal market areas of uniform size
(B) Christaller - Variable shapes and sizes of market areas
(C) Rank-Size Rule - Logarithmic relationship between rank and size
(D) Primate City - A country with many cities of similar size

68. Match List I with List II.

List I: (Migration Theory)

P. Neoclassical Economic Theory
Q. Social Network Theory
R. World System Theory
S. Cumulative Causation Theory

List II: (Core Idea)

1. Migration is a consequence of capitalist development penetrating non-capitalist societies.
2. Migration decisions are made by individuals based on wage differentials.
3. Migration becomes self-perpetuating over time.
4. Migrant ties reduce the costs and risks of movement.

Codes:

(A) P-1, Q-3, R-2, S-4
(B) P-2, Q-4, R-1, S-3
(C) P-2, Q-1, R-4, S-3
(D) P-3, Q-4, R-1, S-2

69. Given below are two statements:

Statement I: 'Sustainability' in the context of urban development refers to meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Statement II: The concept of a 'Smart City' is inherently contradictory to the goals of urban sustainability.

(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

70. The distinction between 'place of birth' and 'place of last residence' as criteria for identifying migrants was introduced in the Census of India in which year?

(A) 1951
(B) 1971
(C) 1961
(D) 1981

71. A primary determinant of internal migration in many countries is the perceived difference between rural income and expected urban income, which includes the probability of finding a job. This is the central argument of which model?

(A) Lee's Push-Pull Model
(B) Stouffer's Intervening Opportunities Model
(C) Expected Income differential logic
(D) Todaro's Model

72. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).

Assertion (A): The definition of 'urban' is not uniform across all countries.

Reason (R): Countries use different criteria, including population size thresholds, population density, and the proportion of the workforce in non-agricultural activities, to define urban areas.

(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.

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(B) Urban growth is primarily concentrated in small and medium towns.
(C) A significant proportion of the urban population is concentrated in a few large metropolitan cities.
(D) The rate of urbanization has been declining since independence.

122. What is the primary focus of the 'New Household Economic Theory' of migration?
(A) Migration as a collective household strategy to minimize risk and overcome capital constraints.
(B) Migration as a result of geographical wage differentials between two locations.
(C) Migration as a response to recruitment by employers in destination countries.
(D) Migration as a result of expanding global capitalism and market penetration.

123. Consider the following sources of migration data:
1. Census of India
2. National Sample Survey (NSS)
3. Civil Registration System (CRS)
4. Health Management Information System (HMIS)

Which of the above are the primary sources for migration data in India?
(A) 1 and 2 only
(B) 1, 2 and 3 only
(C) 3 and 4 only
(D) 1 and 4 only

124. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Indirect methods are used to estimate net migration when direct data on migrant flows are unavailable or unreliable.
Reason (R): The Vital Statistics Method is an indirect method that infers net migration as the residual of population change after accounting for births and deaths.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

125. A key social consequence of large-scale, unplanned urbanization in developing countries is often:
(A) The strengthening of traditional family structures.
(B) A reduction in social inequality.
(C) The emergence of social and spatial segregation, including slums.
(D) The universal provision of high-quality education.

126. Given below are two statements:
Statement I: August Lösch's model of urban hierarchy is more flexible than Christaller's, allowing for different sizes of hexagonal market areas for different goods.
Statement II: Christaller's model is based on a rigid, fixed-K hierarchy.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

127. Which method of measuring centrality is based on the idea that the importance of a town is reflected by the number of connections it has with its surrounding area?
(A) Analyzing telephone traffic or bus service frequency.
(B) Measuring the volume of retail sales.
(C) Counting the number of government offices.
(D) Calculating the population density of the central business district.

128. Match List I with List II.
List I: (Stage in Mobility Transition)
P. Phase I (Pre-modern Traditional Society)
Q. Phase II (Early Transitional Society)
R. Phase III (Late Transitional Society)
S. Phase IV (Advanced Society)
List II: (Dominant Migration Type)
1. Massive movement from countryside to cities.
2. Inter- and intra-urban movement surpasses rural-to-urban.
3. Limited short-distance movement

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1. Reinvestment in and renewal of deteriorating inner-city areas by higher-income groups.
2. Low-density, dispersed urban development on the fringes of cities.
3. Population and economic activity moving out of the central city into surrounding areas.
4. Net migration loss from large metropolitan areas to smaller towns and rural areas.

Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-1, R-2, S-4
(C) P-3, Q-2, R-4, S-1
(D) P-4, Q-1, R-2, S-3

81. All of the following are typically considered socio-economic consequences of urbanization in developing countries EXCEPT:
(A) Overburdening of public services like health and education.
(B) A decrease in the overall number of elderly people in the population.
(C) Growth of a large informal employment sector.
(D) Acute housing shortages and the rise of slums.

82. In migration studies, what is a 'survival ratio'?
(A) The proportion of a population cohort that is expected to survive from one date to another.
(B) The ratio of migrants to non-migrants in a population.
(C) The ratio of births to deaths in a migrant population.
(D) The proportion of migrants who successfully find a job.

83. Consider the following key assumptions of the Neoclassical Economic Theory of migration:
1. The primary cause of labor migration is wage differences between locations.
2. The migration decision is made by the household, not the individual.
3. Markets are assumed to function perfectly.
4. The individual is a rational actor seeking to maximize their income.
5. Migration is a risk diversification strategy.

Which of the above statement(s) is/are correct?
(A) 1 and 2 only
(B) 1, 3 and 4 only
(C) 2 and 5 only
(D) 1, 2, 3, 4 and 5

84. Which of the following correctly describes the process of urbanization?
(A) A simple increase in the number of urban dwellers.
(B) The expansion of a city's physical boundaries.
(C) The renovation of old city centers.
(D) An increase in the percentage of the population living in areas defined as urban.

85. Arrange the phases of Zelinsky's Mobility Transition Model in the correct order:
1. The Late Transitional Society (Massive rural-to-urban migration)
2. The Advanced Society (Inter-urban and intra-urban movement is high)
3. The Early Transitional Society (Beginning of rural-to-urban migration)
4. The Traditional Society (Limited circulation, low mobility)

(A) 4, 3, 1, 2
(B) 1, 3, 4, 2
(C) 4, 1, 3, 2
(D) 3, 4, 1, 2

86. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Census data on migration based on 'place of last residence' is generally preferred over 'place of birth' data for analyzing recent migration trends.
Reason (R): 'Place of last residence' data can capture multiple moves and is more sensitive to the timing of the last move, providing a more current picture of migration.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

87. The 'Forward Survival Ratio Method' is used to estimate net migration for which population group?
(A) The population born during the inter-censal period.

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(C) A is true but R is false.
(D) A is false but R is true.

73. Which of the following best explains Stouffer's Theory of Intervening Opportunities?
(A) The number of persons going a given distance is directly proportional to the number of opportunities at that distance.
(B) The decision to migrate is a function of push and pull factors within the origin and destination.
(C) The number of migrants between two points is inversely related to the number of intervening opportunities between them.
(D) People migrate to maximize their expected income over their lifetime based on urban job probabilities.

74. Consider the following statements regarding refugees:
1. They are protected under international law, primarily the 1951 Refugee Convention.
2. The term is synonymous with 'economic migrant'.
3. They have crossed an international border to seek safety.
4. Host countries are obligated by the principle of non-refoulement not to return them to a territory where they face danger.

Which of the above statement(s) is/are correct?
(A) 1 and 2 only
(B) 2, 3 and 4 only
(C) 1, 3 and 4 only
(D) 1, 2, 3 and 4

75. The hierarchy of world cities into 'Alpha', 'Beta', and 'Gamma' cities is based on their level of integration into the world economy, primarily measured by:
(A) Population size and density.
(B) The presence of historical monuments.
(C) The number of universities and colleges.
(D) The concentration of advanced producer services (e.g., finance, law, advertising).

76. Which of the following statements about migration theories is incorrect?
(A) Neoclassical economic theory views migration as an individual decision for income maximization.
(B) World System theory views migration as an outcome of balanced global development.
(C) New household economic theory sees migration as a household decision to diversify risk.
(D) Dual Labour Market theory attributes migration to pull factors in destination countries.

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77. A city's internal structure is characterized by a central business district, surrounded by a zone of transition, followed by residential zones of increasing quality farther from the center. This pattern is described by which model of urban morphology?
(A) The Sector Model (Hoyt)
(B) The Multiple Nuclei Model (Harris and Ullman)
(C) The Concentric Zone Model (Burgess)
(D) The Central Place Model (Christaller)

78. Given below are two statements:
Statement I: The estimation of inter-censal migration rates is considered a direct measure of migration.
Statement II: It is calculated directly from census questions about residence at a fixed prior period (e.g., 5 or 10 years ago).
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

79. The Lewis-Fei-Ranis model primarily focuses on the transfer of surplus labor from which sector to the modern industrial sector?
(A) The agricultural sector
(B) The service sector
(C) The informal sector
(D) The foreign trade sector

80. Match List I with List II.
List I: (Urban Phenomenon)
P. Suburbanization
Q. Gentrification
R. Urban Sprawl
S. Counter-urbanization
List II: (Description)

96. The rapid growth of edge cities, IT parks, and residential complexes on the outskirts of cities like Bengaluru and Hyderabad is an example of which urban process?
(A) Gentrification
(B) Urban Sprawl
(C) Re-urbanization
(D) Centralization

97. Which of the following is NOT a component of Everett Lee's framework for migration?
(A) Factors associated with the area of origin.
(B) Intervening opportunities.
(C) Factors associated with the area of destination.
(D) Personal factors.

98. Consider the following consequences of the growth of the urban informal sector:
1. It provides employment for a large number of people.
2. Workers often lack social security and legal protection.
3. It contributes to the national economy, though often unmeasured.
4. It can lead to unregulated and hazardous working conditions.
5. It is characterized by high wages and stable contracts.

Which of the above statement(s) is/are correct?
(A) 1, 2, 3 and 4 only
(B) 1, 3 and 5 only
(C) 2 and 5 only
(D) 1, 2, 3, 4 and 5

99. What does the 'World System Theory' propose about international migration?
(A) It is a process of individuals moving to equalize wages across borders.
(B) It is driven by social networks of friends and family at the destination.
(C) It is a consequence of globalization, creating a mobile population from the periphery and semi-periphery.
(D) It is a household strategy to minimize economic risk through income diversification.

100. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Zelinsky's Mobility Transition Hypothesis links the stages of mobility to the stages of the demographic transition.
Reason (R): As a society modernizes, its demographic characteristics (birth and death rates) and its patterns of movement both undergo a systematic evolution.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

101. What distinguishes 'migration' from 'mobility'?
(A) Mobility involves crossing an international border, while migration does not.
(B) Migration is always forced, while mobility is voluntary.
(C) Migration involves a change of residence, while mobility refers to the general capacity to move.
(D) Mobility is a long-term move, while migration is short-term.

102. In India, a settlement is classified as a Class I city or 'city' if its population is:
(A) 20,000 to 49,999
(B) 100,000 or more
(C) 50,000 to 99,999
(D) 1,000,000 or more

103. Given below are two statements:
Statement I: The 'urban future' in many developing countries is closely linked to the challenge of achieving urban sustainability.
Statement II: Key challenges include managing environmental pollution, providing basic amenities, and ensuring inclusive growth.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

104. Consider the following determinants of migration:
1. Wage differentials between origin and

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(B) The population at the beginning of the inter-censal period.
(C) The population at the end of the inter-censal period.
(D) The international migrant population.

88. Which of the following is the most comprehensive definition of 'migration'?
(A) A change of residence across an administrative boundary, involving a degree of permanence.
(B) Any movement of a person from one place to another.
(C) Daily travel between home and work.
(D) A short-term, seasonal movement for work.

89. The existence of a large Filipino diaspora that provides information and support to new migrants from the Philippines is a real-world example of which migration theory?
(A) Todaro Model
(B) Stouffer's Theory
(C) Social Network Theory
(D) Lewis-Fei-Ranis Model

90. Consider the following statements about August Lösch's contribution to central place theory:
1. He assumed a uniform plain with equal transport access in all directions.
2. Unlike Christaller, he did not assume a strict, discrete hierarchy.
3. His model resulted in a landscape of overlapping, non-uniform hexagonal market areas.
4. His primary goal was to find the most profitable location for a single firm.

Which of the above statement(s) is/are correct?
(A) 1 and 4 only
(B) 1, 2 and 3 only
(C) 2 and 3 only
(D) 1, 2, 3 and 4

91. The 'demographic and social change in post-World War II urban systems' in developed countries was characterized by which major trend?
(A) Rapid urbanization and centralization.
(B) The decline of all major cities.
(C) A return to agrarian lifestyles.
(D) Suburbanization and counter-urbanization.

92. Given below are two statements:
Statement I: The Dual Labour Market Theory argues that international migration stems from the intrinsic labor demands of modern industrial societies.
Statement II: It posits that migrants are recruited to fill jobs in the primary labor market, which offers high wages and job security.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

93. Identify the incorrectly matched pair of migration determinant and example.
(A) Push Factor - Lack of employment in the village.
(B) Pull Factor - Higher wages in the city.
(C) Personal Factor - Government migration policy.
(D) Intervening Obstacle - Cost of travel.

94. Match List I with List II.
List I: (Urban Model)
P. Concentric Zone Model
Q. Sector Model
R. Multiple Nuclei Model
S. Central Place Theory
List II: (Proponent)
1. Homer Hoyt
2. Harris and Ullman
3. Ernest Burgess
4. Walter Christaller
Codes:
(A) P-3, Q-1, R-2, S-4
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-2, R-1, S-4
(D) P-4, Q-1, R-3, S-2

95. Which of the following is an indirect method of estimating net internal migration?
(A) The Vital Statistics Method.
(B) Using data on place of birth.
(C) Using data on place of last residence.
(D) Using data on duration of residence.

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(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

113. Given below are two statements:
Statement I: Internal migration refers to human movement within the borders of a single country.
Statement II: International migration involves movement across national borders.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

114. Identify the correctly matched pair of measure and what it estimates.
(A) Vital Statistics Method - Net migration for an area.
(B) Lifetime migration rate - Net migration between two censuses.
(C) Inter-censal migration rate - Total number of moves a person has made.
(D) Survival Ratio Method - Gross in-migration.

115. All of the following are methods of estimating net internal migration EXCEPT:
(A) Vital Statistics Method
(B) National Growth Rate Method
(C) Social Network Analysis Method
(D) Census Survival Ratio Method

116. Consider the following statements regarding the principles of Christaller's Central Place Theory:
1. It assumes an isotropic plain (flat and uniform).
2. Consumers are rational and will travel to the nearest place offering a desired good.
3. The resulting pattern of market areas is a system of interlocking hexagons.
4. It includes three ordering principles: marketing (K=3), transport (K=4), and administrative (K=7).
5. It is primarily a model of industrial location.

Which of the above statement(s) is/are correct?
(A) 1, 2 and 5 only
(B) 3, 4 and 5 only
(C) 1, 2, 3 and 4 only
(D) 1, 2, 3, 4 and 5

117. Which theory best explains why migration might continue to a destination even after the initial causes (like wage gaps) have disappeared?
(A) Neoclassical Economic Theory
(B) Todaro Model
(C) Cumulative Causation Theory
(D) Lewis-Fei-Ranis Model

118. In a country, the population of the largest city is 8 million. The second-largest city has a population of 2.5 million, the third-largest is 2.1 million. This pattern deviates significantly from the rank-size rule and indicates the presence of a:
(A) Census town
(B) Primate city
(C) World city
(D) Central place

119. Arrange the following in the logical sequence of the indirect estimation of net migration using the Vital Statistics (Balancing Equation) Method:
1. Calculate the natural increase (Births - Deaths).
2. Obtain the total population at two points in time (P_t and P_0).
3. Calculate the total population change (P_t - P_0).
4. Subtract the natural increase from the total population change.

(A) 1, 2, 3, 4
(B) 2, 3, 1, 4
(C) 2, 1, 3, 4
(D) 3, 2, 4, 1

120. The concept of a 'hierarchy of world cities' is most closely associated with the work of scholars studying:
(A) Economic globalization
(B) Urban morphology
(C) The demographic transition
(D) Rural settlement patterns

121. Which statement accurately describes a major characteristic of urbanization trends in India?
(A) The level of urbanization is uniform across all states.

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destination.
2. Household-level risk diversification strategies.
3. Demand for low-skill labor in the destination's secondary market.
4. Existence of established migrant networks.

Which of these determinants correspond to the Neoclassical, New Household, Dual Labour Market, and Social Network theories, respectively?
(A) 1, 2, 3, 4
(B) 2, 1, 4, 3
(C) 1, 3, 2, 4
(D) 4, 3, 1, 2

105. Which is the best example of 'circulation'?
(A) A family moving from Mumbai to London to establish permanent residence.
(B) A person commuting daily from a suburb to a city center for work.
(C) A seasonal farmworker who moves for harvesting each year and then returns home.
(D) A person displaced by a flood who moves temporarily to a relief camp.

106. The presence of a very large city like Bangkok in Thailand, which is many times larger than the next largest city, is a classic example of a:
(A) Primate City
(B) Megacity
(C) Global City
(D) Central Place

107. According to the Dual Labour Market Theory, a primary cause of international migration is:
(A) High unemployment in the sending country.
(B) The individual migrant's desire to maximize income.
(C) The expansion of global capitalism into peripheral nations.
(D) A chronic and unavoidable need for foreign workers in the receiving country's economy.

108. Match List I with List II.
List I: (Theorist)
P. Ravenstein
Q. Stouffer
R. Todaro
S. Zelinsky
List II: (Key Contribution)
1. Mobility Transition
2. Expected Income
3. Intervening Opportunities
4. Laws of Migration

Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-3, R-1, S-2
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-4, R-2, S-1

109. Which statement about the Census and Life Table Survival Ratio methods is incorrect?
(A) They are indirect methods for estimating net migration.
(B) They rely on the principle of comparing an age cohort at two different points in time.
(C) They can easily distinguish between in-migration and out-migration.
(D) They require accurate life tables that reflect the population's mortality experience.

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110. The process of demographic and social change in the urban systems of developing countries post-World War II was largely characterized by:
(A) De-urbanization
(B) Counter-urbanization
(C) Stable urban populations
(D) Massive rural-to-urban migration and rapid city growth

111. In the context of urban settlements, 'morphology' refers to:
(A) The city's form, layout, and internal structure.
(B) The functional classification of a city.
(C) The city's demographic profile.
(D) The city's position in the national urban hierarchy.

112. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The growth of world cities is intrinsically linked to the activities of the institutions of global capital.
Reason (R): World cities function as command points for organizing the global economy, which requires a high concentration of financial and corporate services.
(A) Both A and R are true and R is the correct explanation of A.

(circulation).
4. Increase in all forms of mobility, beginning of large-scale rural-urban flow.

Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-4, R-1, S-2
(C) P-3, Q-1, R-4, S-2
(D) P-2, Q-3, R-1, S-4

129. What are the two main types of migration usually discussed in demographic analysis?
(A) Voluntary and Involuntary
(B) Internal and International
(C) Legal and Illegal
(D) Temporary and Permanent

130. Which of the following statements about refugees is incorrect?
(A) Economic hardship is the primary criterion for granting refugee status under the 1951 Convention.
(B) The primary international instrument governing refugees is the 1951 Convention.
(C) Refugees are driven by a well-founded fear of persecution.
(D) The principle of non-refoulement is a core protection for refugees.

131. The establishment of global financial firms, international law offices, and corporate headquarters in cities like London, New York, and Tokyo is a manifestation of their role as:
(A) Primate cities
(B) Megacities
(C) World cities
(D) Capital cities

132. Consider the following determinants and consequences of international migration:
1. Determinants include wage gaps and social networks.
2. Consequences for the receiving country include an increased labor supply.
3. A key determinant is the structural demand for labor in developed economies.
4. A consequence for the sending country is the receipt of remittances.
5. International migration has no significant demographic consequences.

Which of the above statement(s) is/are correct?
(A) 1, 2 and 3 only
(B) 1, 2, 3 and 4 only
(C) 3, 4 and 5 only
(D) 1, 2, 3, 4 and 5

133. 'Brain drain' is a specific consequence of migration that refers to:
(A) The mental stress experienced by migrants.
(B) The loss of cultural knowledge in the destination country.
(C) The emigration of highly educated and skilled individuals from a country.
(D) The return of skilled migrants to their home country.

134. Which statement correctly describes a limitation of using census data for migration analysis?
(A) It provides daily information on population movements.
(B) It fails to capture the reasons for migration.
(C) It captures multiple moves made between censuses.
(D) It is generally free from any coverage or content errors.

135. Given below are two statements:
Statement I: The economic and social theories of the formation of urban centers often point to economies of scale and agglomeration as key factors.
Statement II: Agglomeration economies refer to the benefits firms and people receive from locating near each other.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

136. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): According to the Todaro model, it can be rational for an individual to migrate from a rural area to an urban area even if there is high urban unemployment.
Reason (R): The migration decision is based on the expected urban income (the urban wage multiplied by the probability of employment),

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which may be higher than the certain rural income.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

137. The socio-economic consequences of urbanization include all of the following EXCEPT:
(A) Issues related to the elderly population.
(B) Impacts on housing, health, and education.
(C) The decline of the urban informal sector.
(D) Environmental challenges and sustainability.

138. The model that views migration as a process where a pre-modern traditional society with little migration evolves into an advanced society with high levels of inter-urban and intra-urban movement is the:
(A) Zelinsky's Mobility Transition Model
(B) Lee's Push-Pull Model
(C) Todaro's Expected Income Model
(D) Stouffer's Intervening Opportunities Model

139. What is the most accurate description of the 'inter-relationship between urbanization and migration in developed countries' in the post-World War II era?
(A) A continued high rate of rural-to-urban migration fueling city growth.
(B) A complete cessation of all internal migration.
(C) A dominant pattern of international migration into central cities.
(D) A shift towards de-concentration, with migration from large cities to suburbs and smaller towns (counter-urbanization).

140. Consider the following theories of international migration:
1. Neoclassical Economic Theory
2. Dual Labour Market Theory
3. World System Theory
4. Social Network Theory

Which of the above theories focus primarily on macro-level structural factors rather than individual or household decisions?
(A) 1 and 4 only
(B) 2 and 3 only
(C) 1 and 2 only
(D) 3 and 4 only

141. A planner is using the formula $P_1 = P_0 + (B - D) + (I - O)$, where P_1 and P_0 are populations at two time points, B is births, D is deaths, I is in-migration and O is out-migration. If the planner wants to find net migration (I - O), which method are they using?
(A) The Census Survival Ratio Method
(B) The National Growth Rate Method
(C) The Vital Statistics Method (or Balancing Equation)
(D) The Inter-censal Migration Rate Method

142. The term 'primate city' was coined to describe a city that is exceptionally large and expressive of national capacity and feeling. Who is credited with developing this concept?
(A) Walter Christaller
(B) George Zipf
(C) Ernest Burgess
(D) Mark Jefferson

143. Identify the incorrectly matched pair.
(A) Todaro - Impact of social networks.
(B) Ravenstein - Migration occurs in steps.
(C) Lee - Role of intervening obstacles.
(D) Lewis - Transfer of surplus agricultural labor.

144. Match List I with List II.
List I: (Theory)
P. Neoclassical Economic Theory
Q. New Household Economic Theory
R. Dual Labour Market Theory
S. World System Theory
List II: (Level of Analysis)
1. Macro-level (International Political-Economic Structure)
2. Micro-level (Individual)
3. Macro-level (Structural demand in destination)
4. Micro-level (Household/Family)
Codes:
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-4, R-3, S-1
(C) P-2, Q-4, R-1, S-3
(D) P-4, Q-2, R-3, S-1

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145. Given below are two statements:
Statement I: The rank-size rule was proposed by George Zipf.
Statement II: It states that if cities are ranked in descending order of population size, the population of the nth city will be 1/n of the population of the largest city.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

146. The development of multiple centers of activity (e.g., business, retail, education) within a single large urban area, as opposed to a single CBD, is the core idea of which model?
(A) Multiple Nuclei Model
(B) Concentric Zone Model
(C) Sector Model
(D) Christaller's Central Place Model

147. Which theory suggests that migration is initiated by recruitment from employers in developed countries for jobs that are not taken by the native workforce?
(A) World System Theory
(B) New Household Economic Theory
(C) Dual Labour Market Theory
(D) Cumulative Causation Theory

148. Consider the following potential issues and implications associated with refugees for host countries:
1. Strain on social services and infrastructure.
2. Potential for social and cultural integration challenges.
3. Contribution to the labor force and economy.
4. Diplomatic and political complexities with the country of origin.
5. Legal and moral obligations under international conventions.

Which of the above statement(s) is/are correct?
(A) 1 and 2 only
(B) 1, 2, 3 and 4 only
(C) 5 only
(D) 1, 2, 3, 4 and 5

149. Which of the following is a correct statement about the evolution and growth of urban settlements?
(A) All cities evolve through the same fixed stages.
(B) Ancient cities had the same functions as modern cities.
(C) The evolution of cities is often linked to technological, economic, and social changes.
(D) The growth of cities is always a planned and orderly process.

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150. The concept of 'sustainability' in an urban context primarily integrates which three dimensions?
(A) Economic, Political, and Cultural
(B) Economic, Social, and Environmental
(C) Social, Environmental, and Technological
(D) Historical, Geographical, and Demographic

151. The Indian census defines an Urban Agglomeration (UA) as a continuous urban spread constituted by:
(A) A town and its adjoining outgrowths.
(B) Two or more physically contiguous towns.
(C) A city and one or more adjoining towns with or without outgrowths.
(D) All of the above.

152. Given below are two statements:
Statement I: Rural-to-urban migration is a significant determinant of the pace of urbanization in India.
Statement II: The consequences of this migration include pressure on urban amenities and the growth of the informal sector.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

153. Which of the following scenarios best illustrates the concept of 'Cumulative Causation' in migration?
(A) A person migrates after a detailed cost-benefit analysis of wages.

population.
(B) The surplus labor in the agricultural sector is fully absorbed by the industrial sector.
(C) The government introduces migration restrictions.
(D) Social networks in urban areas become saturated.

189. The definition of 'Urban' in India (for a Census Town) includes all of the following criteria EXCEPT:
(A) A minimum population of 5,000.
(B) A population density of at least 400 persons per sq. km.
(C) The presence of a municipal corporation.
(D) At least 75% of the male main working population engaged in non-agricultural pursuits.

190. The 'functions' of a settlement refer to:
(A) Its physical size and population.
(B) Its location relative to other settlements.
(C) Its internal street pattern and layout.
(D) Its main economic and social activities (e.g., administrative, industrial, commercial).

191. Who among the following developed a more complex version of the central place model with non-fixed K-values and overlapping market areas?
(A) August Lösch
(B) Walter Christaller
(C) Homer Hoyt
(D) Ernest Burgess

192. Given below are two statements:
Statement I: Data on 'place of birth' captures lifetime migration.
Statement II: Data on 'place of last residence' can capture more recent and multiple migrations compared to 'place of birth' data.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

193. Which statement accurately reflects the 'demographic consequences' of migration?
(A) Migration only affects the economic structure of a population.
(B) Migration is age and sex selective, thus altering the demographic pyramids of both origin and destination.
(C) Migration has no effect on the age and sex composition of sending and receiving areas.
(D) Only international migration has demographic consequences, not internal migration.

194. The 'urban future' as a concept in urban studies is most concerned with:
(A) Addressing long-term challenges like climate change, resource scarcity, and technological integration in cities.
(B) Replicating historical city models.
(C) Halting all future urban growth.
(D) Focusing solely on the economic aspects of cities.

195. According to Neoclassical Economic theory, what is the primary cause of labor migration?
(A) The need to diversify household risk across various sectors.
(B) The structural needs of the destination economy's labor market.
(C) Geographic differences in labor supply and demand, resulting in wage differentials.
(D) The existence of kinship and friendship networks in the destination area.

196. A country where the second largest city is approximately half the size of the largest, the third largest is one-third, and so on, exhibits a pattern known as:
(A) Urban primacy
(B) Counter-urbanization
(C) Central place hierarchy
(D) The rank-size rule

197. What is the 'K=4 principle' in Christaller's Central Place Theory known as?
(A) Marketing principle
(B) Administrative principle
(C) Transport principle
(D) Social principle

198. Identify the incorrectly matched pair.

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162. Consider the following statements regarding the socio-economic consequences of urbanization:
1. It leads to a concentration of economic activities and job creation.
2. It can result in severe housing shortages and the growth of slums.
3. Access to specialized health and education services is often better in urban areas.
4. The high density of population can strain basic amenities like water and sanitation.
5. It invariably leads to a more equitable distribution of income.

Which of the above statement(s) is/are correct?
(A) 1, 2 and 5 only
(B) 3, 4 and 5 only
(C) 1, 2, 3 and 4 only
(D) 1, 2, 3, 4 and 5

163. According to the World System Theory, the flow of migration from developing (periphery) to developed (core) nations is a direct result of:
(A) Individual choices to maximize wages across geographic borders.
(B) The historical and ongoing disruption of periphery societies by the penetration of global capitalism.
(C) The existence of a secondary labor market in core nations demanding low-skill workers.
(D) The desire of households in the periphery to diversify their income sources and minimize risk.

164. The most fundamental principle of Christaller's Central Place Theory is that settlements are arranged in a hierarchy based on:
(A) Their industrial output.
(B) Their transportation connectivity.
(C) Their historical significance.
(D) The goods and services they provide to a surrounding hinterland.

165. What does 'inter-relationship between urbanization and migration in developed countries' primarily refer to in the contemporary context?
(A) The process where rural-to-urban migration is the main driver of city growth.
(B) The movement of populations from central cities to suburbs and smaller towns.
(C) The lack of any significant internal migration.
(D) The dominance of international migration over internal migration.

166. Consider the following characteristics of the urban informal sector in developing countries:
1. Ease of entry for workers.
2. Lack of formal contracts and social security.
3. Operations are often small-scale and labour-intensive.
4. It is fully integrated into the formal, regulated economy.

Which of the above statement(s) is/are correct?
(A) 1 and 4 only
(B) 2 and 3 only
(C) 1, 2 and 3 only
(D) 1, 2, 3 and 4

167. The concept that migration is a response to the number of opportunities at a destination, discounted by the number of opportunities closer to the origin, is known as:
(A) Ravenstein's Laws
(B) Todaro's Model
(C) Lee's Theory
(D) Stouffer's Theory of Intervening Opportunities

168. Given below are two statements:
Statement I: The 'Reverse Survival Ratio Method' can be used to estimate the population of a region at a past census date.
Statement II: It can also be used to estimate net migration for cohorts born between the censuses.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

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169. A city's land use is organized around several distinct centers, such as a port, a university campus, and an industrial park, each acting as a focal point for development. This pattern is best described by the:
(A) Concentric Zone Model
(B) Sector Model
(C) Multiple Nuclei Model

(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

209. The theory that explains migration by focusing on wage differentials between two geographical locations is:
(A) World System Theory
(B) Neoclassical Economic Theory
(C) New Household Economic Theory
(D) Social Network Theory

210. Which statement about the 'process of urbanization' is incorrect?
(A) It involves a change in the economic structure from agriculture to industry and services.
(B) It is measured by the percentage of the population living in urban areas.
(C) The process has ended in most developing countries.
(D) It is accompanied by social and cultural changes.

211. A major environmental consequence of urban growth is the loss of permeable surfaces, which leads to:
(A) Increased groundwater recharge.
(B) Reduced surface runoff and flooding.
(C) Increased surface runoff and risk of urban flooding.
(D) The formation of green belts.

212. The most defining characteristic of a 'refugee' under the 1951 Convention is:
(A) The desire for economic improvement.
(B) Displacement by a natural disaster.
(C) The voluntary decision to seek a new life abroad.
(D) A well-founded fear of persecution for reasons of race, religion, nationality, etc.

213. A country has an initial population of 10 million. After 10 years, its population is 12 million. During this period, there were 2.5 million births and 1.0 million deaths. Using the Vital Statistics method, what is the estimated net migration?
(A) -0.5 million
(B) 1.5 million
(C) 0.5 million
(D) 2.0 million

214. What is the 'urban hierarchy'?
(A) The social class structure within a city.
(B) The ranking of cities within a country or region based on size or functional importance.
(C) The administrative structure of a city's government.
(D) The historical sequence of a city's development.

215. Which of the following is a direct method of migration estimation?
(A) National Growth Rate Method
(B) Vital Statistics Method
(C) Life Table Survival Ratio Method
(D) Analysis of census data on place of last residence

216. Given below are two statements:
Statement I: The institutions of global capital, such as transnational banks and financial services firms, are evenly distributed among all cities of the world.
Statement II: The hierarchy of world cities reflects a concentration of these institutions in a few key locations.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

217. Identify the correctly matched pair of theory and its central idea.
(A) Stouffer - Push and pull factors.
(B) Ravenstein - Role of intervening opportunities.
(C) Todaro - Rational choice based on expected, not actual, wage differential.
(D) Lee - Migration as a household risk-minimization strategy.

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179. A migrant from a rural area chooses to move to a nearby town instead of a distant metropolis because the town offers some job prospects, and the cost and risk of moving are lower. This decision is best explained by:
(A) The Primate City Rule
(B) Zelinsky's Mobility Transition
(C) Stouffer's Theory of Intervening Opportunities
(D) The Rank-Size Rule

180. Which of the following is a correct statement about the determinants of internal migration?
(A) They are exclusively economic in nature.
(B) Push factors at the origin are irrelevant.
(C) Pull factors at the destination are the only consideration.
(D) Social factors like marriage and education play a significant role.

181. The establishment of social ties between sending and receiving areas, which facilitates further migration, is a key mechanism in which migration theory?
(A) Neoclassical Economic Theory
(B) Lewis-Fei-Ranis Model
(C) Social Network Theory
(D) Dual Labour Market Theory

182. Which of the following is an incorrect statement regarding the characteristics of a 'smart city'?
(A) It aims to improve operational efficiency and quality of life.
(B) Its primary goal is to encourage urban sprawl.
(C) It heavily relies on Information and Communication Technologies (ICT).
(D) It seeks to promote sustainability and better governance.

183. The 'spatial organisation' of a settlement refers to:
(A) The chronological history of the settlement.
(B) The demographic composition of the settlement.
(C) The political structure governing the settlement.
(D) The arrangement of settlement parts in physical space and the relationships between them.

184. Given below are two statements:
Statement I: The hierarchy of world cities is dynamic and can change over time.
Statement II: The rise and fall of cities in the global hierarchy are linked to shifts in the global economy and the flow of capital.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

185. The estimation of net internal migration by taking the total population change of a region and subtracting the natural increase (births minus deaths) is the essence of the:
(A) Life Table Survival Ratio method.
(B) National Growth Rate method.
(C) Vital Statistics Method.
(D) Census Survival Ratio method.

186. Which of the following is the most significant social consequence of urbanization for the elderly population in many societies?
(A) A shift from family-based care to a greater need for formal social and health support systems.
(B) Increased access to traditional family support systems.
(C) A universal increase in their quality of life.
(D) A decrease in health problems due to urban lifestyles.

187. Identify the correctly matched pair.
(A) Internal migration - Movement from India to Canada.
(B) International migration - Movement from Bihar to Delhi.
(C) Commutation - A software engineer moving from Bengaluru to San Francisco for a project.
(D) Circulation - A seasonal agricultural laborer's annual move for harvesting.

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188. In the dual-sector model of Lewis-Fei-Ranis, migration is expected to slow down or stop when:
(A) The urban population exceeds the rural

(D) Rank-Size Rule

170. Which of the following is a correct statement regarding sources of migration data?
(A) National Sample Surveys provide more detailed information on the reasons for migration than the census.
(B) Census data in India directly measures the number of circular migrants.
(C) The Vital Statistics Method is a direct way of counting migrants.
(D) Migration data sources are generally complete and have no limitations.

171. In urban studies, 'land use patterns' refers to:
(A) The market value of urban land.
(B) The legal ownership of land within a city.
(C) The historical evolution of land prices.
(D) The distribution of different functions (residential, commercial, industrial) across the urban space.

172. All of the following are consequences of international migration for the destination country EXCEPT:
(A) Filling labor shortages, particularly in specific sectors.
(B) An increase in remittances sent from the country.
(C) Increased cultural diversity.
(D) Potential strain on social services if not managed well.

173. Which theorist is associated with the idea that migration decisions are made not by isolated individuals but by larger units of related people, typically families or households?
(A) Michael Todaro
(B) E.G. Ravenstein
(C) Proponents of the New Household Economic Theory
(D) Everett Lee

174. Consider the following migration frameworks:
1. Ravenstein's Laws
2. Zelinsky's Mobility Transition
3. Social Network Theory
4. Lewis-Fei-Ranis Model
5. Christaller's Central Place Theory

Which of the above are identified as theories of internal and international migration?
(A) 1 and 5 only
(B) 1, 2, 3 and 4 only
(C) 2, 3 and 5 only
(D) 1, 2, 3, 4 and 5

175. The primary distinguishing feature between a 'Statutory Town' and a 'Census Town' in India is that a Statutory Town:
(A) has a notified urban local body like a municipality or corporation.
(B) has a larger population.
(C) has a higher population density.
(D) has a higher percentage of males in non-agricultural work.

176. Given below are two statements:
Statement I: The concept of a 'primate city' is inconsistent with the rank-size rule.
Statement II: A primate city distribution is characterized by one city being overwhelmingly dominant, while a rank-size distribution implies a more regular and graduated hierarchy.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

177. The study of urbanization and urban change includes an analysis of the changing distribution of the world's urban population. This refers to:
(A) The even distribution of urban population across all continents.
(B) The shift in the majority of the world's urban population from developed to developing countries.
(C) The decline in the total number of urban dwellers globally.
(D) The movement of people only within a single city.

178. Which of the following is considered a primary cause of urban growth alongside the natural increase of the urban population?
(A) Net rural-to-urban migration.
(B) Urban-to-rural migration.
(C) A decline in urban birth rates.
(D) The reclassification of urban areas as rural.

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(A) Todaro Model - Expected income.
(B) Lewis Model - Intervening opportunities.
(C) Lee's Model - Push/Pull factors and intervening obstacles.
(D) Zelinsky's Model - Mobility transition.

199. The term 'urban system' refers to:
(A) A single, isolated city.
(B) The transportation network within a city.
(C) The administrative body governing a city.
(D) The set of cities in a given region or country and the relationships between them.

200. Given below are two statements:
Statement I: The Census Survival Ratio method is an indirect method to estimate net migration.
Statement II: It works by comparing the size of an age-sex cohort at a census with the expected size of that cohort at a subsequent census, based on survival ratios.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

201. The concept of 'centrality' in urban geography refers to:
(A) The geographical center point of a city.
(B) The age of the oldest building in a city.
(C) The importance of a settlement as a service and goods provider for its surrounding area.
(D) The population density of the city core.

202. In Everett Lee's theory, factors like distance, physical barriers, and migration policies are categorized as:
(A) Intervening obstacles
(B) Push factors
(C) Pull factors
(D) Personal factors

203. Which migration theory provides the most comprehensive explanation for the self-perpetuating nature of migration flows?
(A) Neoclassical Economic Theory
(B) Todaro Model
(C) Lewis-Fei-Ranis Model
(D) Cumulative Causation Theory

204. Which of the following is a correct statement about the inter-relationship between urbanization and migration in developing countries?
(A) Migration is a minor factor in urban growth.
(B) Rural-urban migration contributes significantly to the population growth of cities.
(C) The dominant migration flow is from urban to rural areas.
(D) Urbanization has solved the problem of rural poverty.

205. The flow of workers from Mexico to the United States to work in agriculture and construction, sectors often characterized by low wages and instability, is explained well by which theory?
(A) New Household Economic Theory
(B) Zelinsky's Mobility Transition
(C) Dual Labour Market Theory
(D) Stouffer's Intervening Opportunities

206. Socio-economic consequences of urbanization in developing countries include all of the following EXCEPT:
(A) Pressure on basic amenities.
(B) The growth of an informal economy.
(C) Challenges in providing adequate health and education services.
(D) A universal improvement in housing conditions for all residents.

207. 'Lifetime migration rate' is typically calculated using census data on:
(A) Place of birth and place of enumeration.
(B) Place of last residence.
(C) Duration of residence in the place of enumeration.
(D) Reasons for migration.

208. Given below are two statements:
Statement I: Christaller's Central Place Theory is a normative model that seeks to explain the number, size, and location of human settlements.
Statement II: It assumes that people will always travel to the largest city for all their needs, regardless of distance.
(A) Both Statement I and Statement II are correct.

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(B) Social integration
(C) Fertility
(D) Mortality

229. Which statement about the theories of internal and international migration is incorrect?
(A) The Lewis-Fei-Ranis model is a dual-sector model focusing on labor transfer.
(B) The Todaro model introduces the concept of expected income.
(C) The Social Network Theory emphasizes the role of wage differentials as the sole cause of migration.
(D) Ravenstein's laws were one of the earliest attempts to generalize migration patterns.

230. Given below are two statements:
Statement I: The elderly population in urban areas faces unique challenges related to health, housing, and social isolation.
Statement II: Urbanization universally leads to the breakdown of traditional family support for the elderly.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

231. The concept of 'inter-censal migration' refers to migration that occurs:
(A) Within a person's lifetime.
(B) In the year immediately preceding a census.
(C) Only within a single city.
(D) Between two successive censuses.

232. A planner observes that as a country developed, its migration patterns shifted from local circulation to major rural-urban flows, and later to complex inter-urban and intra-urban movements. This evolution aligns with the:
(A) Mobility Transition Model
(B) Rank-Size Rule
(C) Central Place Theory
(D) Dual Labour Market Theory

233. Methods of measuring centrality for a central place include all of the following EXCEPT:
(A) Counting the number of telephone connections.
(B) Analyzing the volume of bus traffic.
(C) Measuring the average age of the population.
(D) Assessing the range of goods and services offered.

234. Which theory posits a global economic system divided into core, semi-periphery, and periphery countries, where migration is a result of the dynamics between these zones?
(A) World System Theory
(B) Duel Labour Market Theory
(C) Neoclassical Economic Theory
(D) New Household Economic Theory

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235. Which statement correctly describes the nature of data sources for migration studies?
(A) Data sources are perfect and capture all forms of human mobility.
(B) The Census is the only reliable source for migration data.
(C) Indirect estimation methods are no longer necessary due to the quality of direct data.
(D) Each data source, like the Census or NSS, has specific strengths, coverages, and limitations.

236. The 'urban future' and the 'smart city' concepts are closely interlinked because:
(A) They both aim to reduce the population of cities.
(B) 'Smart' technologies are seen as a key tool for achieving a more sustainable and efficient 'urban future'.
(C) They both reject the use of technology in urban management.
(D) They are historical concepts with no relevance to modern planning.

237. What is a primary characteristic of a 'primate city'?
(A) It is located on a prime meridian.
(B) It is always the national capital.
(C) It is disproportionately larger than any other city in the urban system.
(D) It follows the rank-size rule perfectly.

238. Given below are two statements:
Statement I: The administrative principle (K=7) in Christaller's theory suggests that a central

218. In the post-World War II period, the demographic and social change in urban systems in developed countries was most prominently marked by:
(A) Large-scale suburbanization and the growth of metropolitan areas.
(B) Rapid growth of central city populations.
(C) A major decline in car ownership and commuting.
(D) A resurgence of the agricultural sector.

219. Theories of international migration include all of the following EXCEPT:
(A) Duel Labour Market Theory
(B) World System Theory
(C) Social Network Theory
(D) Rank-Size Rule Theory

220. 'Commutation' is best defined as:
(A) A permanent move from a rural area to an urban one.
(B) The daily, periodic movement between a place of residence and a place of work or study.
(C) A temporary, seasonal movement for work.
(D) The forced displacement of a population.

221. The 'cycle of urbanization' model typically includes the stages of urbanization, suburbanization, counter-urbanization, and:
(A) De-industrialization
(B) Gentrification
(C) Re-urbanization
(D) Globalization

222. The fact that it is easier for a new migrant from Punjab to settle in a specific neighborhood in Vancouver, Canada, due to the large existing Punjabi community there is a powerful illustration of:
(A) The Todaro Model
(B) The Lewis-Fei-Ranis Model
(C) The Neoclassical Economic Theory
(D) The Social Network Theory

223. Given below are two statements:
Statement I: Internal migration does not change the total population of a country.
Statement II: Internal migration redistributes the population within a country, affecting the population size of sub-national areas.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

224. Which of the following is a correct statement regarding the consequences of migration?
(A) Remittances from international migrants are generally insignificant for the economies of sending countries.
(B) Migration can lead to 'brain drain' in the country of origin and 'brain gain' in the country of destination.
(C) Migration has purely positive consequences for both sending and receiving regions.
(D) The social consequences of migration are limited to changes in language.

225. In migration theory, 'intervening obstacles' refer to:
(A) The attractions of the destination.
(B) The factors that make migration more difficult, such as distance, cost, and legal barriers.
(C) The negative factors at the origin.
(D) The personal characteristics of the migrant.

226. What is the most significant challenge regarding data on the urban informal sector?
(A) The activities are often unrecorded, making official measurement and analysis difficult.
(B) It is too large to be studied effectively.
(C) The sector does not contribute to the economy in any way.
(D) Workers in the sector are unwilling to provide information.

227. According to Everett Lee's theory, the volume of migration is influenced by the difficulty of surmounting:
(A) Push factors
(B) Pull factors
(C) Intervening obstacles
(D) Personal factors

228. The survival ratio used in migration estimation is a measure of:
(A) Economic viability

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(B) A government program relocates people from a disaster-prone area.
(C) An initial wave of migrants establishes a community, attracting more migrants through network support.
(D) A person decides not to migrate because the travel costs are too high.

154. Consider the following statements regarding the basic concepts of migration:
1. 'Mobility' is a broader term than 'migration'.
2. 'Commutation' involves a change of residence.
3. 'Circulation' refers to short-term, repetitive movements.
4. 'Migration' typically implies a degree of permanence in the change of residence.

Which of the above statement(s) is/are correct?
(A) 1 and 2 only
(B) 2 and 4 only
(C) 1, 3 and 4 only
(D) 1, 2, 3 and 4

155. Which statement regarding the determinants of migration is incorrect?
(A) Push factors are negative conditions at the place of origin that encourage people to leave.
(B) Pull factors are positive attributes of the destination that attract migrants.
(C) Intervening obstacles, such as distance and cost, can hinder migration.
(D) Personal factors, such as age and education, have no influence on the decision to migrate.

156. The concentration of corporate headquarters, international finance institutions, and major stock exchanges in a city like London classifies it as a 'World City' primarily due to its role as a:
(A) Major tourist destination.
(B) Command and control point in the global economy.
(C) Center for manufacturing and industry.
(D) Site of historical and cultural significance.

157. In Christaller's Central Place Theory, the 'range' of a good refers to:
(A) The variety of goods available in a central place.
(B) The minimum population required to support the sale of a good.
(C) The maximum distance a consumer is willing to travel to purchase a good.
(D) The geographical area served by a central place.

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158. Which of the following is NOT an indirect measure of migration?
(A) Vital Statistics Method
(B) National Growth Rate Method
(C) Life Table Survival Ratio Method
(D) Estimation of lifetime migration rates from census data

159. The idea that migration patterns are linked to stages of development and modernization, similar to the demographic transition, was proposed by:
(A) Zelinsky
(B) Ravenstein
(C) Lee
(D) Todaro

160. Given below are two statements:
Statement I: The National Growth Rate method for estimating net migration for a sub-national region assumes that the rate of natural increase is the same for the region and the nation.
Statement II: It calculates net migration as the difference between the region's actual population growth and the growth that would be expected if it grew at the national rate.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

161. Identify the correctly matched pair of migration stream and its common descriptor.
(A) Rural to Urban - Counter-urbanization
(B) Often linked to agricultural seasons or marriage.
(C) Rural to Rural - Urban to Rural - Suburbanization
(D) Urban to Urban - Primarily for agricultural purposes.

place would have complete administrative control over its hinterland.
Statement II: This leads to a hierarchy where each central place governs itself and six surrounding lower-order centers.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

239. The model which argues that migration decisions are based on a rational calculation of 'expected' rather than actual income differences is attributed to:
(A) Michael Todaro
(B) Lee
(C) Ravenstein
(D) Stouffer

240. Identify the incorrectly matched pair of urban concept and its focus.
(A) Urban Morphology - Internal physical structure of the city.
(B) Urban Centrality - The total population living within city limits.
(C) Urban Function - Economic and administrative roles of the city.
(D) Urban Hierarchy - Ranking of cities by size and importance.

241. A sustained period of out-migration from large metropolitan centers to smaller towns and rural areas in a developed country is known as:
(A) Urbanization
(B) Counter-urbanization
(C) Suburbanization
(D) Gentrification

242. A researcher estimates net migration for a state by first calculating the expected population based on the national growth rate, and then comparing it to the state's actual observed population. This researcher is using the:
(A) National Growth Rate Method
(B) Vital Statistics Method
(C) Census Survival Ratio Method
(D) Life Table Survival Ratio Method

243. The following are significant consequences of urbanization EXCEPT:
(A) Employment and the urban informal sector
(B) Basic amenities, housing, health, education
(C) Political party affiliations in urban areas
(D) Elderly population and sustainability

244. The 'growth and activities of the institutions of global capital' is a key characteristic for defining and understanding:
(A) Census Towns
(B) Primate Cities
(C) Central Places
(D) World Cities

245. Which statement correctly describes a limitation of the Vital Statistics Method for estimating migration?
(A) It requires detailed life tables.
(B) It is a direct measure and therefore very complex.
(C) Its accuracy depends heavily on the completeness and accuracy of birth and death registration.
(D) It can only be used at the national level.

246. The idea of 'push' and 'pull' factors, along with intervening obstacles and personal factors, forms the basis of the migration framework proposed by:
(A) E. G. Ravenstein
(B) Everett S. Lee
(C) Michael P. Todaro
(D) Wilbur Zelinsky

247. Given below are two statements:
Statement I: The New Household Economic Theory of migration posits that migration decisions are made by individuals to maximize their personal income.
Statement II: The theory argues that migration is a household strategy to diversify income sources and manage risks.
(A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct, but Statement II is incorrect.
(D) Statement I is incorrect, but Statement II is correct.

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assistance, and social support, making migration a self-sustaining process. As networks expand, they increase the likelihood of further migration, independent of the initial causes. Building on this, the Theory of Cumulative Causation suggests that each act of migration alters the social context in which subsequent migration decisions are made, making additional movements more likely. For instance, out-migration can change local income distributions, create a "culture of migration," and deplete human capital in sending regions, thereby creating further incentives for people to leave. These theories shift the focus from a static, one-time decision to a dynamic process where migration itself becomes a catalyst for more migration. They help explain why migration flows may persist even after the economic differentials or political conditions that originally initiated them have narrowed or disappeared.

Based on the above source, attempt the following five questions.

296. According to Social Network Theory, how do migrant networks facilitate further migration?
(A) By creating new government policies that encourage migration.
(B) By increasing the wages for all workers in the destination country.
(C) By eliminating all intervening obstacles between origin and destination.
(D) By lowering the costs and risks through information and support.

297. The Theory of Cumulative Causation posits that migration is a process that:
(A) is a self-perpetuating process where migration begets more migration.
(B) ends once wage differentials between two regions equalize.
(C) is primarily driven by individual, isolated decisions.
(D) declines as social networks in the destination area become saturated.

298. Which concept describes the phenomenon where out-migration alters local conditions in the sending region, creating more incentives to leave?
(A) Social Network Theory.
(B) Cumulative Causation.
(C) Push-Pull Model.
(D) Neoclassical Economics.

299. An inference from the passage is that social networks and cumulative causation can explain why migration flows might:
(A) cease abruptly when economic conditions change.
(B) continue even when the initial economic incentives weaken.
(C) only occur between geographically close regions.
(D) be limited to highly skilled individuals.

300. In Social Network Theory, the interpersonal ties connecting migrants and non-migrants are considered a form of:
(A) social capital.
(B) financial liability.
(C) political barrier.
(D) economic policy.

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workforce is in non-agricultural jobs.

254. Based on the passage, what is the principal source of data for measuring urbanization in India?
(A) National Sample Survey Office (NSSO) reports.
(B) Annual health surveys.
(C) Municipal corporation records.
(D) The decennial population census.

255. The passage identifies three drivers of urban growth. Which of the following is an example of the 'reclassification' component?
(A) A large number of people moving from a village to a metropolitan city.
(B) A city's population growing because its birth rate exceeds its death rate.
(C) A large village meeting the criteria for a Census Town in a new census.
(D) A family moving from one city to another in search of better employment.

Direction : Please read the following source carefully.

The inter-relationship between urbanization and migration is a cornerstone of demographic and developmental studies, with distinct manifestations in developed and developing countries. In developing nations, this relationship is predominantly characterized by large-scale rural-to-urban migration, which acts as the primary engine of rapid and often concentrated urbanization. This movement is largely fueled by perceived economic opportunities in cities, forming a classic 'pull' factor, even in the face of urban unemployment and inadequate infrastructure. The consequence is often the proliferation of informal settlements, immense pressure on basic amenities, and the growth of an urban informal sector. Conversely, in developed countries, the link is more complex and has evolved over time. While historical rural-to-urban migration was foundational, contemporary patterns often include counter-urbanization (movement from large cities to smaller towns or rural areas) and re-urbanization (revitalization of city centers). Migration in these contexts is not solely economically driven but is also influenced by lifestyle preferences, environmental quality, and life-cycle changes. The resulting urban change is less about explosive growth and more about redistribution of population within a highly urbanized system, leading to different sets of challenges and policy responses compared to the developing world.

Based on the above source, attempt the following five questions.

256. What is described as the primary engine of rapid urbanization in developing countries?
(A) The natural increase of the existing urban population.
(B) Large-scale rural-to-urban migration.
(C) The process of re-urbanization and urban renewal.
(D) International migration from other developing nations.

257. Which of the following is identified as a typical consequence of the urbanization-migration dynamic in developing countries?
(A) Balanced regional development.
(B) A decline in the urban informal sector.
(C) A decrease in pressure on basic amenities.
(D) The proliferation of informal settlements.

258. In developed countries, what phenomenon is characterized by the movement of population from large cities to smaller towns or rural areas?
(A) Counter-urbanization.
(B) Urbanization.
(C) Primate city growth.
(D) Re-urbanization.

259. The passage suggests that migration patterns in developed countries, unlike in many developing countries, are significantly influenced by which of the following?
(A) Solely by the availability of industrial employment.
(B) Primarily by government-led resettlement programs.
(C) By lifestyle preferences and environmental quality.
(D) Exclusively by kinship and family networks.

260. An inference from the passage is that urban policy challenges in developed countries are more likely to be focused on:
(A) Managing population redistribution and revitalizing urban cores.

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248. Which of the following is the best description of the 'urban informal sector'?
(A) Economic activities that are legal but are unregulated, unregistered, and outside government control.
(B) The part of the economy that is formally registered and taxed by the government authorities.
(C) The heavy industrial and manufacturing sector located primarily in designated urban areas.
(D) A sector comprised exclusively of high-tech startup companies and advanced producer services.

249. The transformation of a decaying, low-income inner-city neighborhood into a fashionable, high-income residential and commercial area is a process known as:
(A) Suburbanization
(B) Urban sprawl
(C) Gentrification
(D) Counter-urbanization

250. The theory that proposes that migration becomes progressively more likely over time because each act of migration itself creates social structures that support further migration is called:
(A) Cumulative Causation Theory
(B) World System Theory
(C) Duel Labour Market Theory
(D) New Household Economic Theory

Direction : Please read the following source carefully.

The concept and definition of 'urban' exhibit significant variation across countries, reflecting diverse historical, demographic, and administrative contexts. In India, the Census of India provides a specific two-part definition. Firstly, it includes all statutory places with a municipality, corporation, cantonment board, or notified town area committee. Secondly, it designates 'Census Towns' based on a set of empirical criteria: a minimum population of 5,000; at least 75 percent of the male main working population engaged in non-agricultural pursuits; and a population density of at least 400 persons per square kilometre. This tripartite definition distinguishes India's approach from many other nations that might rely on a single population threshold or administrative designation. The process of urbanization is measured primarily through data collected during the decennial census, which captures changes in the number and size of urban settlements, the proportion of the population living in them, and their demographic characteristics. These sources of data are crucial for tracking trends and patterns, allowing policymakers and researchers to understand the dynamics of urban growth, which is fueled by natural increase, the reclassification of rural areas into urban ones, and net rural-to-urban migration.

Based on the above source, attempt the following five questions.

251. According to the Census of India, which of the following is NOT a mandatory criterion for a settlement to be classified as a 'Census Town'?
(A) A minimum population of 5,000.
(B) At least 75 percent of the female main working population engaged in non-agricultural pursuits.
(C) A population density of at least 400 persons per square kilometre.
(D) At least 75 percent of the male main working population engaged in non-agricultural pursuits.

252. What does the variation in the definition of 'urban' across different countries primarily reflect?
(A) Diverse national administrative, historical, and demographic contexts.
(B) A global consensus on urbanization standards.
(C) The universal application of a single demographic model.
(D) A uniform focus on population density as the sole indicator.

253. Which of the following best describes a 'Statutory Town' in the Indian context?
(A) A town that meets the demographic criteria of population and density.
(B) A rural area that has been recently reclassified as urban due to population growth.
(C) A settlement designated as urban through an act of legislature, such as a municipality.
(D) A town where 75 percent of the male

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on the range and variety of functions offered. A central concept is the 'threshold,' the minimum population required to support a service, and the 'range,' the maximum distance consumers are willing to travel to acquire it. Christaller proposed a hierarchical system of settlements arranged in a hexagonal lattice, which he argued was the most efficient geometric form for minimizing travel distance. In this model, higher-order centers offer more specialized, high-threshold goods and are fewer in number and more widely spaced, while lower-order centers provide everyday, low-threshold goods and are more numerous and closer together. August Lösch later expanded upon this work, creating a more complex and less rigid model. He started from the bottom up, considering networks of individual industries, and proposed a system with multiple hierarchies and specialized production centers, resulting in a more varied and realistic economic landscape than Christaller's uniform model.

Based on the above source, attempt the following five questions.

266. In Central Place Theory, what does the 'threshold' of a service refer to?
(A) The maximum distance a consumer will travel for the service.
(B) The minimum population required to support the service.
(C) The geographical area served by the central place.
(D) The degree of specialization of the service offered.

267. Why did Christaller propose a hexagonal lattice for the arrangement of central places?
(A) To reflect the administrative boundaries of settlements.
(B) To provide the most efficient model for minimizing travel distances.
(C) Because it represents the most complex geometric pattern.
(D) To account for the physical barriers between towns.

268. According to Christaller's model, how do higher-order centers differ from lower-order centers?
(A) They offer more specialized services and are more widely spaced.
(B) They are more numerous and closely spaced.
(C) They provide only low-threshold, everyday goods.
(D) They serve a smaller surrounding population.

269. How did August Lösch's contribution differ from Christaller's model?
(A) Lösch introduced the concepts of threshold and range.
(B) Lösch proposed a more rigid and uniform hierarchical system.
(C) Lösch's model allowed for a more complex and varied economic landscape.
(D) Lösch's model was less focused on economic factors.

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270. A small village with a single grocery store and a post office, serving the immediate local population, would be classified in Central Place Theory as a:
(A) High-order central place.
(B) Dispersed settlement with no centrality.
(C) Specialized production center in Lösch's model.
(D) Low-order central place.

Direction : Please read the following source carefully.

The dynamics of urbanisation and urban change are reflected in the global distribution of urban populations and the hierarchical structuring of city systems. A significant post-World War II trend has been the shift in the locus of urban growth from developed to developing countries, which now account for the majority of the world's urban population and its fastest-growing cities. Within national urban systems, the relationship between city size and rank can often be described by the rank-size rule, which posits that the population of a city is inversely proportional to its rank in the urban hierarchy. For instance, the second-largest city would have half the population of the largest. However, many systems, particularly in developing countries with a history of colonial or centralized administration, exhibit a pattern of primacy, where a single 'primate city' is disproportionately larger than any other city in the country, dominating its economic, political, and cultural life. The evolution of urban systems can also be viewed through a 'cycle of

urbanization,' which includes stages such as urbanization (growth of cities), suburbanization (growth of areas on the urban fringe), counter-urbanization (movement to smaller settlements), and re-urbanization (renewed growth in city centers), reflecting complex demographic and social changes over time.

Based on the above source, attempt the following five questions.

271. What does the 'rank-size rule' suggest about a country's urban system?
(A) All cities in the country are approximately the same size.
(B) The largest city is always twice the size of the second-largest city.
(C) There is an inverse relationship between a city's population size and its rank.
(D) The urban system is dominated by a single, disproportionately large city.

272. A 'primate city' is characteristically:
(A) a city that perfectly follows the rank-size rule.
(B) a city that is significantly larger and more dominant than any other in the nation.
(C) one of several equally sized dominant cities in a country.
(D) the capital city of a country, regardless of its size.

273. The 'cycle of urbanization' describes the evolutionary stages of an urban system. What stage involves the growth of population on the fringes of urban areas?
(A) Urbanization.
(B) Counter-urbanization.
(C) Re-urbanization.
(D) Suburbanization.

274. According to the passage, a major global trend in urban population distribution since World War II has been:
(A) a concentration of urban population growth in developing countries.
(B) a shift in rapid urban growth from developing to developed countries.
(C) a decline in the overall world urban population.
(D) a stabilization of urban hierarchies in all nations.

275. The existence of a primate city is often associated with which of the following contexts?
(A) Countries with a highly decentralized and balanced economic system.
(B) Nations where the rank-size rule is perfectly applicable.
(C) Countries with a history of centralized administration or colonial focus.
(D) Urban systems experiencing strong counter-urbanization.

Direction : Please read the following source carefully.

Socioeconomic and environmental consequences of rapid urbanization and urban growth are multifaceted and present distinct challenges in developed and developing countries. A prominent socioeconomic issue, particularly in developing nations, is the expansion of the urban informal sector. This sector provides crucial employment for many migrants and the urban poor but is characterized by low wages, job insecurity, and a lack of social protection. Concurrently, rapid urban growth places immense strain on the provision of basic amenities, leading to significant deficits in affordable housing, clean water, sanitation, and healthcare access. This often results in poor health outcomes and exacerbates social inequalities. Environmental consequences are equally severe, including air and water pollution, waste management crises, and the loss of green spaces, contributing to local and global sustainability challenges. In response to these pressures, contemporary urban planning has increasingly focused on the concept of sustainability and the development of 'smart cities'. These initiatives aim to use technology and innovative governance to improve urban efficiency, enhance the quality of life, and reduce the environmental footprint of cities, thereby shaping a more viable urban future. The specific challenges related to an aging or elderly population in cities also require targeted policy interventions in both developed and developing contexts.

Based on the above source, attempt the following five questions.

276. Which of the following is described as a key characteristic of the urban informal sector?
(A) Job insecurity and low wages.

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(B) High wages and strong job security.
(C) Comprehensive social protection and benefits.
(D) Formal contracts and legal recognition.

277. Rapid urban growth in developing countries often leads to which of the following consequences regarding basic amenities?
(A) A surplus in affordable housing and sanitation facilities.
(B) An equitable distribution of healthcare and education.
(C) A reduction in the demand for public services.
(D) Significant deficits in housing, water, and healthcare access.

278. The concept of 'smart cities' is presented as a response aimed at:
(A) encouraging the growth of the urban informal sector.
(B) using technology to improve urban efficiency and sustainability.
(C) promoting urban sprawl and decentralization.
(D) limiting urban growth and migration to cities.

279. According to the passage, what is a major environmental consequence of unchecked urban growth?
(A) An increase in urban green spaces and biodiversity.
(B) Improved air and water quality due to population concentration.
(C) Air pollution, waste management crises, and loss of green spaces.
(D) A decrease in the city's overall environmental footprint.

280. The passage implies that the socioeconomic consequences of urbanization:
(A) are exclusively negative in all contexts.
(B) affect only the migrant population within cities.
(C) are limited to environmental degradation.
(D) include both challenges like informal employment and opportunities for economic activity.

Direction : Please read the following source carefully.

The study of human movement requires precise definitions to distinguish between various forms of mobility. The broadest term, 'mobility,' encompasses all types of territorial movements. A more specific form is 'circulation,' which refers to short-term, repetitive, or cyclical movements that do not involve a permanent or long-term change of residence, such as seasonal work or nomadic pastoralism. 'Commutation' is a specific type of circulation, defined as the daily or regular journey between one's residence and place of work or study. In contrast, 'migration' is defined by a change in one's usual place of residence over a significant duration, crossing some administrative or political boundary. This distinction is crucial for demographic analysis. Migration itself is broadly categorized into 'internal migration,' which occurs within the borders of a single country (e.g., from one state to another), and 'international migration,' which involves crossing a national border. The data for studying these phenomena come from various sources, such as censuses and surveys, but these sources often have limitations in their nature, coverage, and ability to capture all forms of movement, particularly short-term circulation and illegal or undocumented migration, which can lead to underestimation and an incomplete picture of population dynamics.

Based on the above source, attempt the following five questions.

281. Which term describes the daily journey between home and work?
(A) Commutation.
(B) Migration.
(C) Circulation.
(D) Mobility.

282. What is the key characteristic that distinguishes 'migration' from 'circulation'?
(A) The distance of the movement.
(B) A change in the usual place of residence.
(C) The mode of transport used.
(D) The repetitive or cyclical nature of the movement.

283. A family moving from the state of Bihar to Maharashtra with the intention of settling there is an example of:

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(B) Managing explosive population growth in primary cities.
(C) Providing basic sanitation and housing for new rural migrants.
(D) Addressing the needs of a rapidly expanding informal economy.

Direction : Please read the following source carefully.

The classification of settlements is fundamental to understanding their role and structure within a geographical space. Settlements are typically categorized based on criteria such as population size, economic function, or administrative status, ranging from hamlets and villages to towns and megacities. The evolution and growth of these settlements are complex processes, driven by historical, economic, and social forces. As a settlement grows, its internal structure, or morphology, becomes more complex. This morphology is the physical form and layout of the settlement, encompassing street patterns, building arrangements, and overall shape. Closely related to morphology are land use patterns, which describe the spatial distribution of different activities within the urban area, such as residential, commercial, industrial, and recreational zones. The functions of a settlement refer to the primary economic and social activities it performs for its residents and for a wider surrounding area, known as its hinterland. The spatial organisation of settlements within a region is not random; it is often governed by principles of centrality and hierarchy. This organisation reflects the interdependencies between settlements, where larger, more functionally complex centers provide specialized goods and services to smaller, less complex ones, creating a structured system of urban places.

Based on the above source, attempt the following five questions.

261. What does the term 'morphology' of a settlement refer to?
(A) The primary economic and social activities it performs.
(B) Its classification based on population size.
(C) The surrounding area that it serves.
(D) Its physical form, including street patterns and building layout.

262. The spatial distribution of residential, commercial, and industrial activities within a city is known as its:
(A) Morphology.
(B) Land use pattern.
(C) Hierarchy.
(D) Centrality.

263. According to the passage, the spatial organisation of settlements is governed by principles of centrality and hierarchy, which implies that:
(A) All settlements in a region are of equal size and importance.
(B) The location of settlements is entirely random and unpredictable.
(C) Settlements form a structured system based on function and interdependence.
(D) Smaller settlements are completely independent of larger urban centers.

264. The term 'hinterland' is best described as:
(A) The central business district of a large city.
(B) The physical layout and street pattern of a settlement.
(C) A classification of a settlement based on its population size.
(D) The wider surrounding area served by a settlement.

265. The evolution and growth of a settlement from a small village to a large city typically results in:
(A) Increased complexity in its internal structure and functions.
(B) A decrease in functional specialization.
(C) A simplification of its morphology and land use.
(D) A reduced interdependence with surrounding settlements.

Direction : Please read the following source carefully.

The spatial arrangement of urban settlements is often explained through the principles of centrality and hierarchy, most famously articulated in Walter Christaller's Central Place Theory. This theory posits that settlements function as 'central places' providing goods and services to their surrounding populations. The principle of centrality is key; it refers to the degree to which a place serves its surrounding area, which can be measured through various methods focusing

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(D) a framework centered on household risk-minimization strategies.

Direction : Please read the following source carefully.

Measuring migration is essential for understanding population change, but it often requires sophisticated estimation techniques due to a lack of direct registration systems. Two primary approaches exist: direct and indirect measures. Direct measures rely on specific questions asked in a population census or survey, such as 'place of birth' or 'place of last residence'. Comparing the place of birth with the place of enumeration allows for the estimation of 'lifetime migration'. Comparing the place of residence at a fixed past date (e.g., five years ago) with the current place of residence provides data on 'inter-censal migration'. While direct, these methods depend on the availability and quality of census data. When such data are absent or inadequate, demographers turn to indirect measures to estimate net internal migration. The Vital Statistics Method is one such technique, where net migration for a region is calculated as the total population change between two censuses minus the natural increase (births minus deaths) during that period. Another approach is the Survival Ratio Method, which uses life table or census survival ratios. For instance, the Census Survival Ratio Method estimates the expected population in an age-sex cohort at a second census based on survival rates derived from national data and compares it to the actual enumerated population; the difference is attributed to net migration.

Based on the above source, attempt the following five questions.

291. Estimating migration by comparing a person's place of birth with their current place of residence is a method for measuring:
(A) Inter-censal migration.
(B) Commutation.
(C) Lifetime migration.
(D) Net migration using vital statistics.

292. The Vital Statistics Method for estimating net internal migration calculates it as:
(A) total population change minus natural increase.
(B) the total number of births minus the total number of deaths.
(C) the number of people who changed residence in the last five years.
(D) the expected population based on survival ratios minus the actual population.

293. Which of the following is an example of a direct measure of migration?
(A) The Census Survival Ratio Method.
(B) The Vital Statistics Method.
(C) The National Growth Rate Method.
(D) Using a census question about the place of last residence.

294. The Survival Ratio Method estimates net migration by attributing the difference between which two figures to migration?
(A) The number of births and the number of deaths.
(B) The expected population of a cohort and the actual enumerated population of that cohort.
(C) The total population at two different censuses.
(D) The population from the 'place of birth' data and 'place of last residence' data.

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295. Why are indirect measures of migration, such as the Vital Statistics Method, used by demographers?
(A) Because they are more accurate than direct measures.
(B) To measure daily commutation patterns instead of permanent moves.
(C) When direct data from census questions on migration are unavailable or inadequate.
(D) Because they are simpler to calculate than direct rates.

Direction : Please read the following source carefully.

Beyond economic pull and push factors, contemporary migration theories emphasize the role of social and structural forces in perpetuating movement. Social Network Theory, for example, argues that migrant networks are a form of social capital that significantly lowers the costs and risks of migration. These networks, composed of interpersonal ties connecting migrants, former migrants, and non-migrants in origin and destination areas, provide information, financial

(A) International migration.
(B) Internal migration.
(C) Commutation.
(D) Circulation.

284. The passage suggests that a significant limitation of available migration data is its:
(A) difficulty in capturing short-term and undocumented movements.
(B) overemphasis on daily commutation patterns.
(C) inability to distinguish between internal and international migration.
(D) focus on historical migration at the expense of current trends.

285. A shepherd who moves his flock between summer and winter pastures each year without changing his permanent home is engaging in:
(A) Permanent migration.
(B) Commutation.
(C) Circulation.
(D) Re-urbanization.

Direction : Please read the following source carefully.

Theories of migration provide frameworks for understanding the complex determinants and processes of human movement. Early contributions, such as Ravenstein's 'laws,' identified empirical regularities, suggesting that most migration is over short distances and occurs in stages, with each main current of migration producing a counter-current. Everett Lee's model built on this by proposing a framework of 'push' factors at the origin, 'pull' factors at the destination, intervening obstacles, and personal factors that influence the decision to migrate. Economic theories offer more specific explanations. The Lewis-Fei-Ranis model and Neoclassical Economic Theory focus on wage differentials and labor market imbalances between regions as the primary driver of migration. Michael Todaro's model refined this by introducing the concept of 'expected' income, suggesting migrants are rational actors who weigh the probability of finding a job in the city against the urban-rural wage gap. More recent theories take a broader view. The New Household Economic Theory posits that migration decisions are made collectively by households to minimize risks and maximize income. Structural theories, like World System Theory and Dual Labor Market Theory, argue that migration is a consequence of global capitalist expansion, creating a mobilized population and a segmented labor market in wealthy countries that demands migrant labor.

Based on the above source, attempt the following five questions.

286. According to Everett Lee's model of migration, which of the following is NOT one of the core components influencing the migration decision?
(A) Push factors at the origin.
(B) Pull factors at the destination.
(C) Intervening obstacles.
(D) Global climate change patterns.

287. The Todaro model of migration is a refinement of neoclassical theory because it incorporates the concept of:
(A) social networks as the primary driver.
(B) household-level decision making.
(C) 'expected' income rather than actual wage differentials.
(D) the historical laws of migration proposed by Ravenstein.

288. Which theory suggests that migration decisions are made collectively by families to minimize risks?
(A) The Lewis-Fei-Ranis Model.
(B) New Household Economic Theory.
(C) Neoclassical Economic Theory.
(D) Ravenstein's Laws of Migration.

289. World System Theory and Dual Labor Market Theory explain migration as a result of:
(A) individual choices based on personal factors.
(B) short-distance, stage-by-stage movements.
(C) the balancing of push and pull factors alone.
(D) structural forces of global capitalism and segmented labor markets.

290. Ravenstein's 'laws' of migration are best described as:
(A) a set of empirical generalizations observed from migration data.
(B) a complex mathematical model of economic decision-making.
(C) a theory focusing on the segmentation of labor markets.

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ANSWERS

1. (B) At least 75% of the male main working population engaged in non-agricultural pursuits.
The Indian census classifies a settlement as a census town if it lacks a formal municipality but meets three specific demographic criteria. These requirements include a minimum total population of five thousand people and a density of at least four hundred persons per square kilometer. Crucially, at least seventy-five percent of the male main working population must be engaged in non-agricultural pursuits, reflecting an economic shift towards urban activities.

2. (A) Census of India
The Census of India remains the most comprehensive and primary source of information for analyzing urban trends and patterns across the country. Conducted every ten years, it provides decadal data on total urban population, growth rates, and levels of urbanization at national, state, and district levels. This official demographic record is essential for researchers and policymakers to understand the spatial distribution and changing characteristics of urban centers.

3. (A) Both Statement I and Statement II are correct.
Urbanization is a process measured by the percentage of a population residing in urban settings, reflecting structural societal shifts. Urban growth, however, denotes the absolute numerical increase of the urban population over time, regardless of the percentage change. Both phenomena are fundamental to studying demographic transitions, as they capture different aspects of how populations expand within and move toward cities during development and industrial phases.

4. (A) P-2, Q-4, R-1, S-3
Settlements are analyzed through distinct concepts that define their physical and functional characteristics. Morphology examines the internal structure and physical layout of a city. Centrality assesses how much a settlement serves its surrounding area with goods or services. Hierarchy involves the ranking of settlements based on size or relative importance. Function identifies the dominant economic or administrative activity that sustains the settlement within a wider system.

5. (C) The presence of a primate city is always an indicator of a well-balanced urban system.
A primate city is defined by its overwhelming dominance and significantly larger size compared to other urban centers in a country. This pattern often concentrates political, economic, and cultural influence in a single location, creating an imbalanced urban system. Such dominance usually results from historical factors or centralized planning rather than representing a well-balanced distribution of urban population, services, and infrastructure across the nation.

6. (B) The rank-size rule
The rank-size rule proposes a mathematical relationship where the population of a city is inversely proportional to its rank. In this specific scenario, the second city is half the size of the first, the third is one-third, and the fourth is one-fourth. This hierarchical distribution suggests a diverse and integrated urban system where city sizes follow a predictable, graduated sequence instead of being dominated.

7. (D) Decreasing agricultural productivity and rural distress.
Rapid urbanization in developing nations is frequently driven by distressing conditions in rural environments that force individuals to seek better livelihoods. Declining agricultural productivity and rural distress act as powerful push factors, compelling workers to move toward cities in search of alternative employment and survival. This movement often occurs even when urban centers are unprepared to provide adequate housing, infrastructure, or formal employment.

8. (A) Both A and R are true and R is the correct explanation of A.
The informal sector serves as a vital economic cushion in cities where the formal labor market cannot accommodate the rapid influx of migrants.

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41. (C) A person who has crossed an international border owing to a well-founded fear of being persecuted.
According to international legal conventions, a refugee is someone who has been forced to cross an international border due to a well-founded fear of persecution. This fear must be linked to specific grounds such as race, religion, nationality, membership in a particular social group, or political opinion. This status distinguishes them from economic migrants, who move voluntarily for better financial opportunities rather than for safety.

42. (A) World System Theory
World System Theory explains migration through the lens of global capitalist expansion and the resulting international division of labor. It posits that the penetration of capitalist markets into peripheral nations disrupts traditional economies, creating a mobile population. These individuals often migrate toward core countries where economic power is concentrated. This process reinforces a global hierarchy where resources and labor from the periphery sustain growth in the core.

43. (A) Both A and R are true and R is the correct explanation of A.
Social networks play a crucial role in facilitating migration by providing prospective movers with essential information and support. Friends and relatives already established in the destination act as intermediaries, offering financial assistance and help with finding housing and employment. These ties significantly reduce the costs and risks associated with moving to a new area, making migration a more viable and attractive option for many individuals and households.

44. (B) The administrative principle
Walter Christaller identified three primary principles that determine the arrangement and hierarchy of central places. The K=7 principle is known as the administrative principle. In this model, the higher-order central place exercises complete administrative control over its own area and all six surrounding lower-order settlements. This arrangement is designed to create a clear and efficient spatial structure for governance and the provision of public services.

45. (C) Vital Statistics Method
When accurate vital statistics regarding births and deaths are available for a sub-national area, the Vital Statistics Method is the most suitable approach for estimating net internal migration. This indirect technique uses the demographic balancing equation, subtracting the natural increase from the total population change between two periods. Because it relies on registered data, its accuracy is directly dependent on the quality of local civil registration systems.

46. (B) 2, 3, 4 and 5 only
The smart city concept involves using information and communication technology to enhance the efficiency of urban services and improve the quality of life. Key components include sustainable development, environmental protection, and better urban governance. While it aims to manage population density effectively through technology, its primary focus is not on reducing the city's total population but rather on making urban living more sustainable and digitally.

47. (A) The act of migration changes the social context at both origin and destination, making future migration more likely.
Cumulative Causation Theory suggests that the act of migration is a self-perpetuating process that alters social and economic conditions at both ends. Each migrant establishes new links and networks, which lower the barriers for future movers from the same community. This creates a feedback loop where initial movement makes subsequent migration more likely, regardless of the original economic factors that initially triggered the flow of people.

48. (B) Spatial Organisation - The arrangement of and relationship between elements in an urban area.
Spatial organization describes the arrangement of different elements within an urban area and the functional relationships between them. This concept focuses on how land uses, buildings, and transportation networks are distributed in space to support various urban activities. Unlike morphology, which emphasizes the physical form and layout, spatial organization emphasizes the logical and structured way that diverse urban functions are situated and connected.

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begin to equalize, facilitating overall economic development.

16. (B) 4, 2, 1, 3
The cycle of urbanization represents a sequential model of how urban systems evolve over time. The process typically begins with initial urbanization, where population concentrates in city centers. This is followed by suburbanization, as residents move to the fringes. Later, counter-urbanization occurs with movement toward smaller towns or rural areas. Finally, re-urbanization may take place as urban cores are renewed and attract populations back.

17. (C) Statement I is correct, but Statement II is incorrect.
The Census of India utilizes two distinct criteria to identify migrants: place of birth and place of last residence. A person is considered a migrant if their current place of enumeration differs from their birthplace or their previous residence. While both concepts identify migrants, they yield different estimates because many individuals move multiple times. Data on the place of last residence is more sensitive to recent shifts.

18. (A) Circulation - The process of becoming a refugee.
Circulation involves repetitive, short-term, or cyclical movements that do not involve a permanent change of residence. It is distinct from becoming a refugee, which describes a person forced to flee their home due to persecution or conflict. While circulation is a form of mobility often linked to seasonal work, the refugee status is a legal and humanitarian condition resulting from displacement across international or internal borders.

19. (C) A software engineer living in Noida and travelling to Gurugram every day.
Commutation refers to the regular, periodic movement of individuals between their place of residence and their place of work or education. Unlike migration, it does not involve a change of residence. A common example is an employee living in one city and traveling daily to a different city for their job. This pattern of mobility is a hallmark of modern metropolitan areas connected by transportation.

20. (B) P-4, Q-1, R-2, S-3
Several key proponents have shaped migration theory through distinct models. Everett Lee developed the push-pull framework, emphasizing factors at origins and destinations. Wilbur Zelinsky proposed the mobility transition model, linking migration to demographic stages. Samuel Stouffer introduced the concept of intervening opportunities to explain movement patterns. Finally, E.G. Ravenstein established the fundamental laws of migration that describe general characteristics of how and why people move.

21. (C) Migration that is estimated to have occurred between two consecutive census dates.
Inter-censal migration refers to the movement of people estimated to have occurred during the period between two consecutive census dates. Since censuses are usually conducted decennially, this measure captures the net effect of migration over a ten-year interval. It is an important demographic indicator used to understand how populations redistribute themselves spatially within a country, helping planners account for growth not explained by births.

22. (B) Town B
Under the place of last residence concept, a migrant is identified based on the location where they lived immediately before moving to their current residence. If an individual moves from their birthplace to an intermediate town for study and then to a city for work, the intermediate town is recorded as the place of last residence. This method is valuable for capturing multiple migration steps.

23. (D) Number of marriages during the period.
The Vital Statistics Method, or balancing equation, is an indirect way to estimate net internal migration for a specific area. It calculates migration as the residual change in population after accounting for natural increase. This requires data on the initial and final population counts, along with the total number of births and deaths during the period. Marriages are not a component used in this specific calculation.

24. (C) 1, 2, 3, and 4 only
Everett Lee's model of migration identifies four primary categories of factors that influence

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the decision to move. These include factors associated with the area of origin, factors related to the destination area, intervening obstacles like distance or cost, and personal factors such as age or gender. While socio-cultural norms can influence these categories, they are not listed as a separate, explicit component in Lee's framework.

25. (C) There is no minimum population criterion.
In the Indian census, a statutory town is any settlement that has been formally notified as an urban area by the government. This includes locations with a municipality, corporation, cantonment board, or notified town area committee. Unlike census towns, statutory towns do not have to meet specific demographic or population thresholds to be classified as urban. Their status is determined solely by the presence of a local.

26. (A) Rural-to-urban migration is a major component of urban growth.
Rural-to-urban migration serves as a fundamental driver of urban growth in many developing nations. As people move from villages to cities in search of better economic opportunities and social services, the urban population increases significantly. This influx, combined with the natural increase of the existing urban population, accelerates the urbanization process. Such migration patterns reflect structural economic shifts from agricultural activities toward industrial and services.

27. (C) Statement I is correct, but Statement II is incorrect.
The rank-size rule describes a regular distribution where a city's population is inversely related to its rank within the urban system. However, many countries feature a primate city that is disproportionately larger than all other cities, violating this mathematical regularity. In such cases, the urban system is dominated by a single center, whereas the rank-size rule implies a more balanced and integrated hierarchy of settlements.

28. (A) Both A and R are true and R is the correct explanation of A.
August Lösch modified the central place model to create a more realistic and flexible economic landscape compared to Christaller's rigid hierarchy. His model allows for specialized production centers and recognizes that different goods have different market areas. This results in a complex system of overlapping hexagons and varying hexagonal sizes, accounting for the reality that economic activities do not always follow a uniform, discrete hierarchy.

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29. (C) The replacement of natural vegetation with heat-absorbing surfaces like asphalt and concrete.
Urban heat islands occur when cities experience significantly higher temperatures than their surrounding rural areas. This phenomenon is primarily caused by the massive replacement of natural vegetation with heat-absorbing materials like concrete and asphalt. These surfaces trap solar radiation during the day and release it slowly at night. Additionally, the lack of evapotranspiration in paved environments reduces the cooling effect typically provided by plants and soil.

30. (D) The marketing principle
Walter Christaller identified different principles to explain the hierarchical arrangement of central places. The K=3 principle is known as the marketing principle, which suggests that each higher-order center serves itself and one-third of the population of the six surrounding lower-order settlements. This specific arrangement aims to provide goods and services efficiently while minimizing the distance consumers must travel to access various levels of market.

31. (A) It is only collected every ten years, missing short-term and circular movements.
Census data provides a decadal snapshot of population distribution, which creates a major limitation for studying dynamic human movement. Because it is only collected every ten years, it often misses short-term, seasonal, or circular migrations that occur between the survey periods. These fluid movements are significant in developing economies but remain largely invisible in official census records, requiring alternative surveys for a more detailed analysis.

32. (C) 1, 3 and 4 only
The Todaro model of migration posits that individuals are rational actors who decide to move based on expected rather than actual income. This calculation includes the urban-rural wage differential and the probability of

securing an urban job. Consequently, migration can persist even when urban unemployment is high, as long as the potential for a significantly higher urban wage makes the risk economically justifiable for the migrant.

33. (B) Dual Labour Market Theory
Dual Labour Market Theory suggests that international migration is driven by the structural requirements of modern industrial economies. These economies are characterized by a segmented labor market, divided into a primary sector with stable, high-paying jobs and a secondary sector with unstable, low-status work. Migration occurs because native workers often refuse secondary sector jobs, creating a continuous demand for foreign labor to fill these roles.

34. (A) New Household Economic Theory
New Household Economic Theory argues that migration is a collective decision made by families or households rather than isolated individuals. In this framework, households send members to work in different locations or sectors to diversify income sources and minimize economic risk. Remittances from migrants provide a stable financial cushion, helping the family manage potential failures in local agricultural production or other economic shocks.

35. (C) It always results in a net economic loss for the origin country.
International migration has complex impacts on origin countries that are not always negative. While the departure of skilled workers can lead to a brain drain, the remittances sent home often represent a crucial source of foreign exchange and financial support for families. Furthermore, migration can reduce pressure on local labor markets. It is incorrect to assume that international movement always results in a net loss.

36. (B) P-4, Q-3, R-1, S-2
Urban geography utilizes various terms to describe different settlement patterns and processes. The rank-size rule refers to a regular hierarchical distribution of city populations. A primate city is one that is disproportionately large and dominant within a nation. Counter-urbanization describes the movement of people away from large metropolitan areas toward smaller towns. Smart cities utilize advanced technology and data to improve urban services.

37. (C) Statement I is correct, but Statement II is incorrect.
The Census Survival Ratio Method is an indirect technique used to estimate net migration for specific age and sex cohorts. It works by comparing a cohort's size in one census to its expected size in a subsequent census based on national survival rates. While it requires population counts by age and sex from two censuses, it does not specifically require local data on births and deaths.

38. (B) The area exclusively served by a central place for its goods and services.
A central place region refers to the geographical hinterland that is served by a specific central place for its goods and services. In Christaller's theory, these regions are modeled as hexagonal areas to ensure complete coverage without overlap or gaps. The size and range of the central place region depend on the order of goods provided, with higher-order settlements serving larger and more extensive.

39. (D) National Growth Rate Method.
Direct measures of migration are derived from specific questions in census or survey forms about residence changes. These include lifetime migration rates based on birthplaces and inter-censal rates based on prior residence. Conversely, the National Growth Rate Method is an indirect estimation technique. It infers migration as a residual by comparing a region's actual population growth to the expected growth based on national averages.

40. (A) 2, 1, 4, 3
Migration theories have evolved over time to capture the complexity of human movement. Ernst Ravenstein published his fundamental laws in the late nineteenth century. Everett Lee expanded these ideas with his push-pull model in the mid-twentieth century. Michael Todaro introduced his expected income model in the late nineteen-sixties. Later, the New Household Economic Theory emerged to explain migration as a collective family strategy for risk diversification.

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the natural increase of the urban population. These two processes are deeply interconnected, as the search for better livelihoods and services in cities fuels the structural shift toward a more urbanized and industrialized society.

58. (A) Both A and R are true and R is the correct explanation of A.
World cities act as the primary command points for the global economy, necessitating a high concentration of specialized corporate and financial services. These cities house the headquarters of multinational corporations and major stock exchanges, which manage global flows of capital. They provide the advanced infrastructure and access to information required for these complex operations, attracting institutions that require a central location to coordinate international economic and business activities.

59. (A) Both Statement I and Statement II are correct.
Walter Christaller's K=4 principle, known as the transport principle, explains a settlement pattern optimized for accessibility. In this model, central places are situated along major transport routes to minimize travel distance between locations. A higher-order central place serves its own population plus half of the population of the six surrounding lower-order settlements. This arrangement ensures that all settlements are efficiently connected through a hierarchical and logical transportation network.

60. (B) Families are more likely to make international moves than young, single adults.
Ravenstein's Laws of Migration describe general patterns observed in human movement. He noted that most migrants travel short distances and that migration often occurs in steps toward major commercial centers. He also observed that every migration current produces a counter-current. However, he found that young, single adults are much more likely to migrate internationally than entire families, as individual movement is generally easier and less costly than moving.

61. (C) It assumes that the mortality rates of the nation as a whole apply to the sub-region being studied.
The Life Table Survival Ratio method is an indirect technique used to estimate net migration for specific age and sex cohorts. It assumes that the mortality rates calculated for the entire nation are applicable to the specific sub-region under study. By applying these survival ratios to an initial population, researchers can estimate how many people should still be present, attributing the difference from the actual count to migration.

62. (A) 4, 3, 2, 1
Urban settlements are typically classified in a hierarchy based on their population size and functional importance. In an ascending order of population, a town is the smallest unit, followed by a city. Larger concentrations are categorized as a metropolis, which often serves as a regional hub. The largest and most complex urban areas, often exceeding ten million residents, are defined as megacities, representing the peak of urban.

63. (A) Kenya
The concept of the urban informal sector was first systematically examined in a landmark report by the International Labour Organization focused on Kenya in the early nineteen-seventies. This study identified a large segment of the urban workforce engaged in small-scale, unregulated activities that operated outside the formal economic system. Since then, the term has become central to understanding urban labor markets and poverty in many developing nations.

64. (B) Brain Drain
Brain drain occurs when a country loses its highly educated and skilled professionals through international migration. This phenomenon is common in developing nations where experts in fields like information technology or medicine seek better opportunities, salaries, and working conditions in developed countries. While the destination country benefits from this influx of talent, the origin country faces a significant loss of human capital and potential for domestic innovation and.

65. (B) 1, 2, 3 and 4 only
Urbanization in developing countries brings diverse consequences, including significant pressure on basic amenities and the rapid growth of slums. While it provides increased employment opportunities in both formal and informal sectors, it also offers better access to specialized healthcare and education. However,

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49. (A) Both Statement I and Statement II are correct.
The Lewis-Fei-Ranis model is a dual-sector framework explaining how labor transfers from a traditional agricultural sector to a modern industrial sector. It assumes that rural areas have surplus labor with low productivity, which can be moved to cities without reducing total agricultural output. The model predicts that this migration process will continue until wages in both sectors equalize, marking the end of the labor surplus.

50. (C) P-3, Q-4, R-1, S-2
Migration data in India is collected from multiple sources, each providing different insights. Census questions on place of birth identify lifetime migrants, while questions on the place of last residence capture more recent movements. The National Sample Survey offers detailed information on the specific reasons for moving through sample-based studies. Finally, vital statistics on births and deaths allow for the indirect estimation of net migration.

51. (C) The feminization of migration.
The feminization of migration refers to the increasing and visible participation of women in independent migration streams. Traditionally, women were often viewed as secondary migrants following male family members, but they are now frequently the primary movers. This trend is especially prominent in the global service sector, where there is a high demand for labor in fields such as healthcare, domestic work, and professional services.

52. (D) The Demographic Transition
Wilbur Zelinsky's Mobility Transition Model suggests that the types and volume of migration in a society change in a predictable sequence as it modernizes. This process is closely linked to the stages of the demographic transition, where shifts in birth and death rates occur alongside changes in mobility patterns. As a society progresses from a traditional to an advanced stage, mobility evolves from limited circulation to massive urbanization.

53. (C) 3 million
The rank-size rule posits that the population of a city should be equal to the population of the largest city divided by its rank. If the largest city has twelve million people, the fourth-largest city is calculated by dividing twelve million by four. This results in an approximate population of three million. This mathematical regularity reflects a highly integrated and mature urban system with a balanced hierarchy.

54. (B) 2, 3 and 4 only
Urbanization in India is characterized by several distinct patterns. While the overall level remains relatively low, a massive proportion of the urban population is concentrated in Class I cities with over one lakh residents. Significant regional disparities exist across states, and the growth of census towns has recently emerged as a major factor. However, the pace of urbanization has not been consistently accelerating throughout the entire period.

55. (D) The Civil Registration System is the primary source for measuring the level of urbanization.
Measuring urbanization levels requires reliable demographic data, primarily from the national census. The census provides a comprehensive count of the urban population, while National Sample Surveys offer deeper socio-economic details. Although the Civil Registration System tracks births and deaths, it is not the primary source used to measure the overall level of urbanization. Most data sources have inherent limitations regarding their frequency, geographic coverage, and currentness.

56. (A) A person whose place of enumeration is different from their place of birth.
In the context of the Indian census, a lifetime migrant is defined as any individual whose current place of enumeration is different from their recorded place of birth. This measure captures the total number of people who have moved at least once since they were born. It does not account for the timing or frequency of moves, making it a cumulative indicator of the population's historical spatial redistribution.

57. (C) Migration is a key demographic component driving the process of urbanization.
In developing nations, migration serves as a fundamental demographic component that directly shapes the urbanization process. The movement of people from rural to urban areas contributes significantly to city growth alongside

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Since formal employment opportunities are often insufficient to absorb large numbers of rural arrivals, individuals turn to unregulated, small-scale activities for survival. Consequently, the urban informal sector becomes a significant part of the economy, providing livelihoods to many urban residents.

9. (C) The historical sequence of urban growth, suburbanization, counter-urbanization, and re-urbanization.
The cycle of urbanization describes a historical progression through which many developed nations have passed. It begins with initial urban growth and centralization, followed by suburbanization as people move to the fringes. Subsequently, counter-urbanization occurs when populations shift to smaller towns or rural areas. Finally, re-urbanization may take place as inner cities are revitalized and attract residents back to the central urban cores.

10. (A) It proposes a hierarchical arrangement of settlements based on the provision of goods and services.
Central Place Theory explains the spatial distribution of settlements based on their role in providing goods and services to surrounding populations. It suggests that towns are organized in a hierarchical arrangement, where larger central places offer a wider range of specialized functions compared to smaller ones. This model assumes an isotropic plain and rational consumer behavior, resulting in a system of hexagonal market areas.

11. (D) Increased efficiency in public transport systems.
While urbanization often causes significant environmental degradation, certain outcomes can be positive for urban management. Increased air and water pollution, urban heat islands, and the loss of biodiversity are well-documented negative consequences. However, higher population density in cities can facilitate the development of more efficient public transport systems. This increased efficiency is generally viewed as a positive development that helps mitigate the environmental impact of automobile reliance.

12. (C) 1, 3 and 4 only
World cities serve as vital command and control hubs within the global economy, housing influential institutions like major stock exchanges and multinational headquarters. They are distinguished by a massive concentration of advanced producer services, including international finance, law, and advertising. Unlike cities ranked merely by population size, the hierarchy of world cities is determined by their level of integration and influence within global economic and financial networks.

13. (C) Repetitive, short-term, and cyclical movements without a declared change of residence.
In demographic studies, circulation defines a specific pattern of human mobility characterized by repetitive, short-term movements. This type of movement does not involve a permanent or long-term change of residence, distinguishing it from migration. Examples include seasonal labor movements or frequent travel between home and a temporary work location. Circulation reflects how individuals adapt to economic opportunities across different spaces without detaching from their primary residence.

14. (D) E.G. Ravenstein
Ernst Georg Ravenstein formulated the early systematic principles governing human movement, known as the Laws of Migration. His work suggested that most migrants travel only short distances and move toward major centers of commerce or industry. He also noted that migration occurs in steps and that every major current of migration produces a compensating counter-current. These observations laid the foundation for modern theories of demographic mobility.

15. (A) Lewis-Fei-Ranis Model - Dual Economy with a modern and a traditional sector
The Lewis-Fei-Ranis model describes migration within a dual economy consisting of a traditional agricultural sector and a modern industrial sector. It posits that surplus labor from the rural sector, where productivity is low, moves to the urban industrial sector in response to higher wages. This labor transfer continues until the surplus is exhausted and wages in both sectors

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urbanization does not invariably lead to a reduction in crime rates. In many cases, rapid and unplanned urban growth is associated with rising social and.

66. (A) A method that assumes a region's population grows at the national rate, with the difference attributed to net migration.
The National Growth Rate Method is an indirect way of estimating net migration for a sub-national area. This method assumes that a region's population grows at the same rate as the national population. Any difference between the actual observed population at the end of a period and the population expected based on the national growth rate is attributed to the net effect of people moving in or.

67. (C) Rank-Size Rule - Logarithmic relationship between rank and size
The rank-size rule proposes a mathematical regularity in urban hierarchies, where a city's population is inversely related to its rank. This relationship is typically represented as a logarithmic link between rank and size on a graph. Unlike the primate city model, which features one overwhelmingly large center, the rank-size rule suggests a more balanced system where several cities of varying sizes exist in a predictable and graduated.

68. (B) P-2, Q-4, R-1, S-3
Different migration theories offer distinct explanations for human movement. Neoclassical economic theory focuses on individual wage maximization. Social network theory emphasizes how ties between migrants reduce movement costs. World system theory views migration as a result of capitalist expansion into peripheral societies. Finally, cumulative causation theory suggests that migration becomes self-perpetuating over time as social structures adapt to movement, making future flows easier and more likely to continue.

69. (C) Statement I is correct, but Statement II is incorrect.
Urban sustainability involves meeting current developmental needs without compromising the ability of future generations to meet theirs. This concept integrates economic, social, and environmental goals within the city. Although some critics suggest challenges, the smart city concept is not inherently contradictory to sustainability. In fact, many smart city initiatives specifically use technology and data to improve resource efficiency, reduce environmental impact, and enhance the overall sustainability of.

70. (B) 1971
The Census of India initially identified migrants solely based on their place of birth. However, to capture more detailed information about movement patterns and multiple migrations, the criterion of place of last residence was introduced in nineteen-seventy-one. This addition allowed researchers to distinguish between lifetime migrants and those who had moved more recently, providing a more current and nuanced understanding of how the Indian population redistributes itself across space over.

71. (D) Todaro's Model
The Todaro model explains migration as a rational response to the gap between rural income and the expected urban income. Unlike models focusing on actual wages, Todaro emphasizes that migrants consider the probability of finding a job in the city. Thus, migration remains an economically sound decision as long as the potential for higher urban earnings, adjusted for employment odds, exceeds the certain but lower income available in.

72. (A) Both A and R are true and R is the correct explanation of A.
Defining what constitutes an urban area is a complex task because there is no single international standard. Countries utilize various criteria such as population size thresholds, population density, and the percentage of the workforce employed in non-agricultural activities. Some nations also consider administrative status or the presence of specific infrastructure. These diverse definitions reflect different geographic, economic, and political contexts, making cross-national comparisons of urbanization levels challenging for demographic.

73. (C) The number of migrants between two points is inversely related to the number of intervening opportunities between them.
Samuel Stouffer's theory of intervening opportunities suggests that the volume of

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migration between two places is not solely determined by distance. Instead, it is related to the number of opportunities available at the destination and inversely related to the number of opportunities located along the way. If a migrant finds a suitable job or housing closer to their origin, they are less likely to travel to a more.

74. (C) 1, 3 and 4 only
Refugees are individuals who cross international borders to seek safety from persecution, conflict, or violence. They are protected under international law, specifically the nineteen-fifty-one Refugee Convention. A core principle of this protection is non-refoulement, which prohibits host countries from returning refugees to territories where their lives or freedom would be threatened. This status is legally distinct from economic migrants, who move voluntarily for better financial prospects rather.

75. (D) The concentration of advanced producer services (e.g., finance, law, advertising).
The hierarchy of world cities is primarily determined by their level of integration into the global economic system. Scholars categorize these cities into alpha, beta, and gamma levels based on the concentration and reach of advanced producer services. This includes sectors like international finance, corporate law, advertising, and management consultancy. These services enable world cities to function as command and control centers that coordinate global financial flows and multinational business.

76. (B) World System theory views migration as an outcome of balanced global development.
Migration theories provide various perspectives on why people move across borders. Neoclassical economic theory emphasizes individual income maximization, while the new household economic theory views migration as a family strategy to diversify risk. Dual labor market theory highlights the structural demand for foreign workers in destination countries. However, world system theory does not see migration as an outcome of balanced development but rather as a result of global.

77. (C) The Concentric Zone Model (Burgess)
The Concentric Zone Model, proposed by Ernest Burgess, describes the internal structure of cities as a series of rings originating from a central point. The central business district is at the core, followed by a zone of transition. Beyond this are residential areas that improve in quality and status with increasing distance from the center. This model reflects how different land uses and social groups compete for space within an.

78. (A) Both Statement I and Statement II are correct.
Inter-censal migration rates are considered a direct measure of human movement because they are calculated using specific census questions. These questions typically ask respondents about their place of residence at a fixed prior date, such as five or ten years before the census enumeration. By comparing this prior residence with the current location, researchers can directly count individuals who moved during the interval, providing a clear picture of recent migration.

79. (A) The agricultural sector
The Lewis-Fei-Ranis model is a dual-sector framework that analyzes the transfer of labor during economic development. It focuses on the movement of surplus workers from a traditional, low-productivity agricultural sector to a modern, high-productivity industrial sector. This labor transfer is driven by the demand for workers in growing urban industries. The process continues until the surplus is exhausted, leading to rising wages in both the rural and urban sectors of.

80. (B) P-3, Q-1, R-2, S-4
Urban phenomena describe various ways that cities grow and change. Suburbanization involves population moving from the city center to surrounding fringes, while gentrification refers to higher-income groups renewing deteriorating inner-city areas. Urban sprawl is characterized by low-density, dispersed development on the edges of cities. Finally, counter-urbanization represents a net migration loss from large metropolitan areas toward smaller towns and rural locations, often reflecting a desire for different.

81. (B) A decrease in the overall number of elderly people in the population.
Urbanization in developing countries often strains public services and creates acute housing shortages, leading to the growth of slums and a large informal sector. While these cities face

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significant demographic shifts, they do not typically experience a decrease in the overall number of elderly people. In fact, as urban populations age and family structures change, providing care and support for the growing elderly population becomes an increasingly important social and economic.

82. (A) The proportion of a population cohort that is expected to survive from one date to another.
In the context of migration estimation, a survival ratio represents the probability that a specific age and sex cohort will survive from one date to another. These ratios are typically derived from life tables or by comparing age cohorts across two successive censuses. By applying these ratios to an initial population, researchers can estimate the expected number of survivors. The difference between this expected count and the actual population is attributed to.

83. (B) 1, 3 and 4 only
Neoclassical economic theory assumes that individuals are rational actors who migrate to maximize their income based on geographic wage differences. This model presupposes that markets function perfectly and that labor moves from low-wage to high-wage areas until equilibrium is reached. While other theories emphasize household strategies or risk diversification, the neoclassical approach focuses primarily on the individual decision-making process and the role of wage differentials as the fundamental driver of.

84. (D) An increase in the percentage of the population living in areas defined as urban.
Urbanization is a demographic process defined by an increase in the proportion of a total population residing in areas classified as urban. It involves more than just a numerical increase in city dwellers; it reflects a structural shift in society from rural-based activities to urban-based industry and services. This percentage measure is the primary indicator used by demographers and planners to track the level and pace of a country's urban transformation.

85. (A) 4, 3, 1, 2
Zelinsky's Mobility Transition Model outlines five phases through which a society passes as it modernizes. It starts with the traditional society, characterized by limited mobility and circulation. This is followed by the early transitional stage, where rural-to-urban migration begins to increase. The late transitional phase features massive movement to cities. Finally, the advanced society sees a shift where inter-urban and intra-urban movements become dominant, reflecting a highly mobile and developed.

86. (A) Both A and R are true and R is the correct explanation of A.
In the Indian census, data based on the place of last residence is generally more useful for analyzing contemporary migration than birthplace data. This is because it can capture multiple moves and provide better information about the timing of the most recent relocation. Birthplace data only indicates that a person moved at some point in their life, whereas last residence data offers a more current and sensitive picture of population.

87. (B) The population at the beginning of the inter-censal period.
The Forward Survival Ratio Method is an indirect technique used to estimate net migration for a specific population group over an inter-censal period. This method applies survival ratios to the population present at the beginning of the period to determine how many individuals are expected to survive until the next census. By comparing this expected number of survivors with the actual population counted at the end, researchers can infer the net.

88. (A) A change of residence across an administrative boundary, involving a degree of permanence.
Migration is most comprehensively defined as a change of residence that involves moving across an administrative boundary and intended for a degree of permanence. This distinguishes it from short-term mobility like commuting or temporary circulation. While all migration involves movement, not all movement constitutes migration. The requirement of an administrative border and a lasting change of home are essential criteria for identifying and measuring migration in demographic studies and official.

89. (C) Social Network Theory
Social Network Theory explains migration as a process facilitated by personal ties between individuals in origin and destination areas.

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These frameworks provide a comprehensive toolkit for understanding the diverse economic and social factors that drive both internal and international migration flows across.

105. (C) A seasonal farmworker who moves for harvesting each year and then returns home.
Circulation describes a pattern of mobility involving repetitive and short-term movements that do not lead to a permanent change of residence. A clear example is a seasonal agricultural worker who moves to different regions for harvesting periods and returns home once the work is completed. Unlike commutation, which is daily, or migration, which is lasting, circulation allows individuals to access distant economic opportunities while maintaining their primary social and residential.

106. (A) Primate City
A primate city is one that is exceptionally large and overwhelmingly dominant within a country's urban system. This dominance is not just in terms of population size—often being many times larger than the second-ranked city—but also in its concentration of economic, political, and cultural influence. Bangkok is a classic example of this phenomenon, serving as the singular hub for almost all major national activities in Thailand, creating a highly.

107. (D) A chronic and unavoidable need for foreign workers in the receiving country's economy.
Dual Labour Market Theory argues that international migration is caused by a structural and chronic demand for foreign labor in developed economies. These societies have segmented labor markets where native workers often avoid low-status, unstable, and low-paying jobs in the secondary sector. Consequently, employers must recruit migrants to fill these essential roles. In this framework, migration is driven primarily by pull factors and the internal economic requirements of the.

108. (C) P-4, Q-3, R-2, S-1
Key scholars have provided foundational contributions to the study of migration through diverse models. Ernst Ravenstein established the early Laws of Migration, while Samuel Stouffer introduced the concept of Intervening Opportunities. Michael Todaro developed the Expected Income model to explain rural-to-urban flows, and Wilbur Zelinsky proposed the Mobility Transition model to link movement patterns with demographic stages. Together, these theories provide a robust framework for analyzing why, how, and where.

109. (C) They can easily distinguish between in-migration and out-migration.
The Census Survival Ratio and Life Table Survival Ratio methods are indirect techniques used to estimate net migration for specific population cohorts. They work by comparing actual population counts with expected numbers based on survival probabilities. While useful for determining overall net change, these methods cannot easily distinguish between the separate flows of in-migration and out-migration. They only provide the net result of all movement after accounting for the expected impact.

110. (D) Massive rural-to-urban migration and rapid city growth
After World War II, many developing nations experienced a period of rapid urbanization characterized by massive rural-to-urban migration. This movement was driven by the search for better economic opportunities in growing industrial centers and the push of rural poverty and lack of land. As a result, cities grew at unprecedented rates, leading to significant structural changes in both the national population distribution and the social and economic fabric of the.

111. (A) The city's form, layout, and internal structure.
In urban geography, morphology refers to the study of a city's physical form, layout, and internal structure. This includes the analysis of street patterns, the arrangement of buildings, and the distribution of different land uses across the urban space. By examining morphology, researchers can understand how a city has evolved over time and how its physical environment reflects the social, economic, and political forces that have shaped its.

112. (A) Both A and R are true and R is the correct explanation of A.
The growth of world cities is deeply connected to the operations of global capital institutions, such as transnational banks and major corporations.

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97. (B) Intervening opportunities.
Everett Lee's migration framework identifies four main categories that influence the decision to move. These include factors associated with the place of origin, factors related to the destination, intervening obstacles like distance, and personal factors such as age. While the concept of intervening opportunities, proposed by Samuel Stouffer, is similar, it is not an explicit component of Lee's original model. Lee emphasized that the balance of these factors.

98. (A) 1, 2, 3 and 4 only
The urban informal sector plays a vital role in developing economies by providing employment to large numbers of people, though often under unregulated and hazardous conditions. These activities contribute significantly to the national economy but frequently lack formal contracts and social security protections for workers. Characterized by ease of entry and small-scale operations, the sector is generally associated with low and unstable wages rather than the high, stable earnings found in.

99. (C) It is a natural consequence of the political and economic globalization process, creating a mobile population from the periphery and semi-periphery.
World System Theory explains international migration as a consequence of the global expansion of capitalist markets. This process disrupts traditional economic and social structures in peripheral and semi-peripheral nations, creating a mobile population that is often drawn toward core countries. In this view, migration is a natural outcome of political and economic globalization rather than simply an individual choice. It reflects a world economy where people follow the flow.

100. (A) Both A and R are true and R is the correct explanation of A.
Wilbur Zelinsky's Mobility Transition Hypothesis argues that the patterns and volume of human movement in a society evolve systematically alongside the stages of the demographic transition. As a society modernizes and experiences changes in birth and death rates, its mobility also transforms from limited local circulation to massive rural-urban flows and eventually to complex inter-urban movements. This hypothesis links spatial behavior to broader economic and social development, suggesting that mobility.

101. (C) Migration involves a change of residence, while mobility refers to the general capacity to move.
While both terms relate to movement, migration and mobility have distinct meanings in demographic studies. Mobility is a broad concept referring to the general capacity or potential for movement, including daily trips and short-term travel. Migration is a specific form of mobility that involves a change of residence across an administrative boundary and implies a degree of permanence. Thus, all migration is a form of mobility, but not all.

102. (B) 100,000 or more
The Indian census classifies urban settlements into six categories based on their population size to facilitate analysis and planning. A Class I city, commonly referred to as a 'city', is a settlement with a population of one hundred thousand or more. This classification is significant because Class I cities house a large and growing proportion of India's urban population and serve as major centers for economic, administrative, and social activities.

103. (A) Both Statement I and Statement II are correct.
The future of cities in many developing nations is intrinsically linked to achieving sustainability in the face of rapid growth. This involves addressing critical challenges such as environmental pollution, the provision of basic amenities like water and sanitation, and ensuring inclusive economic development. Sustainable urban planning aims to balance these needs so that current growth does not compromise the well-being of future generations or the health of the local and.

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104. (A) 1, 2, 3, 4
Migration theories emphasize different primary determinants of human movement. Neoclassical theory focuses on wage differentials, while New Household theory highlights family risk diversification. Dual Labour Market theory points to the demand for low-skill workers in destination countries, and Social Network theory emphasizes the role of established migrant ties.

environmental protection. A sustainable city seeks to provide economic opportunities and a high quality of life for all its residents while minimizing its environmental footprint and resource consumption. This integrated approach is essential for ensuring that urban areas remain resilient and.

151. (D) All of the above.
An Urban Agglomeration is defined in the Indian census as a continuous urban spread consisting of a core town and its adjoining outgrowths. It can be formed by a city and one or more neighboring towns, two or more physically contiguous towns, or a single town with its associated suburban developments. This concept captures the reality of functional urban units that extend beyond formal administrative boundaries, providing a more accurate measure of.

152. (A) Both Statement I and Statement II are correct.
Rural-to-urban migration is a fundamental driver of the urbanization process in India, as individuals move to cities in search of better livelihoods and services. This massive influx of people significantly shapes the growth of urban centers but also creates substantial challenges. Consequences include heavy pressure on basic urban amenities like water and housing, alongside the rapid expansion of the informal employment sector as the formal market fails to absorb all newcomers.

153. (C) An initial wave of migrants establishes a community, attracting more migrants through network support.
Cumulative Causation in migration describes a process where the movement of people becomes self-sustaining over time. An initial wave of migrants establishes a community in the destination, creating social networks and support structures. These ties lower the costs and risks for future migrants from the same origin, encouraging more people to move. This feedback loop means that migration continues and even grows, driven by social structures rather than the original economic factors.

154. (C) 1, 3 and 4 only
Mobility and migration are related demographic concepts with specific meanings. Mobility is the broader term referring to the general capacity to move, while migration involves a change of residence across an administrative boundary, usually with a degree of permanence. Circulation describes short-term, repetitive movements, and commutation involves daily travel between home and work. Commutation does not involve a change of residence. Understanding these distinctions is crucial for analyzing diverse patterns of human.

155. (D) Personal factors, such as age and education, have no influence on the decision to migrate.
The decision to migrate is influenced by a combination of geographic and personal factors. Push factors encourage people to leave their origin, while pull factors attract them to a destination. Intervening obstacles, such as distance and cost, can hinder movement. However, personal factors like age, education, and individual preferences play a major role in how someone perceives and responds to these external factors. It is incorrect to assume that personal characteristics have.

156. (B) Command and control point in the global economy.
World cities like London function as primary command and control points within the global economic system. Their status is defined by the high concentration of advanced producer services and global capital institutions, such as international banks and major corporate headquarters. These cities serve as the central hubs where global financial transactions are coordinated and international business strategies are managed. Their role is fundamental to the operation of the worldwide economy, extending far.

157. (C) The maximum distance a consumer is willing to travel to purchase a good.
In Christaller's Central Place Theory, the range of a good is a fundamental spatial concept. It represents the maximum distance a consumer is willing to travel to purchase a specific good or service. Higher-order goods, which are expensive or specialized, have a larger range because people will travel further to obtain them. Conversely, low-order everyday items have a small range. The range helps determine the size of the market.

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These cities serve as command and control hubs that organize and manage the global economy. To perform this role, they require a high concentration of specialized financial, legal, and business services. Consequently, world cities attract the infrastructure and talent necessary to facilitate the complex international economic transactions.

113. (A) Both Statement I and Statement II are correct.
Migration is categorized based on the administrative boundaries that are crossed during the move. Internal migration describes human movement within the borders of a single country, such as moving from a rural village to a city. International migration involves movement across national borders from one country to another. Both forms are significant demographic processes that redistribute populations, although international migration involves additional legal, political, and cultural complexities related to national.

114. (A) Vital Statistics Method - Net migration for an area.
Various measures are used to estimate migration, each providing different demographic insights. The Vital Statistics Method is an indirect approach that estimates net migration for an area by analyzing the residual of population change after accounting for births and deaths. Lifetime migration rates identify individuals who have moved at least once since birth, while survival ratio methods help infer net movement for specific age cohorts. These tools are essential for understanding population.

115. (C) Social Network Analysis Method
Net internal migration can be estimated through several indirect demographic techniques. The Vital Statistics Method uses the balancing equation, while the National Growth Rate Method compares regional growth to national averages. The Census Survival Ratio Method infers migration from expected versus actual cohort sizes. However, social network analysis is a qualitative or quantitative method used to study the ties between individuals rather than an established technique for estimating the numerical volume of.

116. (C) 1, 2, 3 and 4 only
Walter Christaller's Central Place Theory is built on several key assumptions, including a flat, uniform plain and rational consumer behavior. It suggests that settlements are arranged in a hierarchical system of interlocking hexagonal market areas. The model identifies three ordering principles: marketing, transport, and administrative. While it describes the distribution of services, it is primarily a model of settlement hierarchy and service provision rather than a theory focused on the.

117. (C) Cumulative Causation Theory
Cumulative Causation Theory explains why migration often persists even after the original economic triggers, like wage gaps, have diminished. It suggests that each act of migration changes the social and economic context at both ends of the flow. Migrants establish networks and support structures that make future movement easier and less risky for others. This creates a self-sustaining momentum where migration becomes a structural feature of the societies involved.

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118. (B) Primate city
An urban system where one city is overwhelmingly larger than all others is characterized by urban primacy. In such cases, the primate city dominates the national landscape, concentrating most of the country's population, economic activities, and political power. This pattern deviates significantly from the rank-size rule, which predicts a more graduated and balanced hierarchy of city sizes. Primate cities are common in countries with highly centralized histories or colonial backgrounds.

119. (B) 2, 3, 1, 4
The Vital Statistics Method involves a logical sequence of steps to estimate net migration indirectly. First, researchers obtain total population counts for two points in time to calculate the total change. Next, they determine the natural increase by subtracting total deaths from total births during that same period. Finally, the natural increase is subtracted from the total population change. Any remaining difference is attributed to the net effect of people moving.

120. (A) Economic globalization
The concept of a hierarchy of world cities is closely linked to the study of economic globalization and how global financial flows are organized. Researchers in this field analyze how cities like London, New York, and Tokyo function as central nodes in a worldwide network of capital, information, and advanced services. This hierarchy reflects the varying degrees to which different cities are integrated into and exert control over the global economic.

121. (C) A significant proportion of the urban population is concentrated in a few large metropolitan cities.
Urbanization in India is marked by a significant concentration of the urban population in a few large metropolitan cities. While many smaller towns exist, the majority of urban dwellers reside in Class I cities, which serve as the primary hubs for employment, education, and services. This pattern highlights a top-heavy urban hierarchy and significant regional disparities, as the growth and infrastructure are not evenly distributed across all states or city.

122. (A) Migration as a collective household strategy to minimize risk and overcome capital constraints.
New Household Economic Theory shifts the focus of migration analysis from the individual to the household unit. It proposes that families send members to different locations as a collective strategy to minimize economic risk and overcome credit constraints. By diversifying their income sources through remittances, households can protect themselves against local failures in agriculture or other sectors. This framework explains migration as a rational family-level response to broader market.

123. (A) 1 and 2 only
In India, the two primary sources for comprehensive data on human migration are the National Census and the National Sample Survey. The census provides decadal information on the stock of migrants based on birthplace and last residence. The National Sample Survey offers more frequent and detailed data on the reasons for migration and the socio-economic characteristics of migrants. Other systems like civil registration focus on vital events like births rather than.

124. (A) Both A and R are true and R is the correct explanation of A.
Indirect methods are essential tools for demographers when direct data on migrant flows are missing or unreliable. The Vital Statistics Method is a prominent indirect approach that uses the demographic balancing equation. It infers net migration by calculating the total population change between two periods and then subtracting the natural increase, which is the difference between births and deaths. This allows for a reasonable estimate of net movement based on available.

125. (C) The emergence of social and spatial segregation, including slums.
Unplanned and rapid urbanization in many developing nations often leads to significant social and spatial segregation. This is most visible in the emergence of slums and informal settlements where residents lack access to basic amenities and legal land tenure. Such patterns reflect deep social inequalities and the inability of formal urban systems to accommodate the large influx of migrants. These areas often become marginalized zones within the broader urban landscape.

126. (A) Both Statement I and Statement II are correct.
August Lösch's central place model is considered more flexible than Christaller's because it allows for overlapping market areas and different hexagonal sizes for various goods. While Christaller assumed a rigid hierarchy with fixed K-values, Lösch recognized that the spatial order of the economy is more complex. His model accommodates specialized centers and varying market reaches, creating a richer and more realistic representation of how economic activities are distributed across a geographic.

127. (A) Analyzing telephone traffic or bus service frequency.
Centrality can be measured through various methods that assess a settlement's importance as a service hub. One approach involves analyzing the frequency and volume of connections with the surrounding area, such as telephone traffic or bus service frequency. These measures reflect how much a town serves as a focal point for the population in its hinterland. Settlements with higher connectivity and interaction are

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considered more central and important within the regional urban.

128. (B) P-3, Q-4, R-1, S-2
Wilbur Zelinsky's Mobility Transition model describes how migration patterns evolve through different stages of development. In the traditional phase, mobility is limited to local circulation. The early transitional stage sees an increase in all forms of movement, particularly the beginning of rural-urban flows. Massive rural-to-city movement dominates the late transitional phase. Finally, in advanced societies, inter-urban and intra-urban movements become the most prominent types of mobility, reflecting a highly.

129. (B) Internal and International
Demographic analysis typically classifies migration into two main types based on whether international borders are crossed. Internal migration refers to movement within the borders of a single country, while international migration involves moving from one country to another. Both processes are fundamental to understanding how populations redistribute themselves, although they involve different legal, political, and social implications. Distinguishing between these types is essential for developing appropriate migration and population policies at.

130. (A) Economic hardship is the primary criterion for granting refugee status under the 1951 Convention.
The definition of a refugee under the nineteen-fifty-one Convention is strictly based on a well-founded fear of persecution due to race, religion, nationality, social group, or political opinion. Economic hardship, while a common driver of migration, is not a legal criterion for granting refugee status. Refugees are forced to flee for their safety and are protected by international law and the principle of non-refoulement, which prevents their forced return to.

131. (C) World cities
Cities like London, New York, and Tokyo are classified as world cities because they function as the primary command nodes for global capital. They host a high concentration of international financial firms, corporate headquarters, and specialized legal and advertising offices. These institutions coordinate and control global economic activities, making these cities central to the functioning of the worldwide financial system. Their global influence extends far beyond their national borders or population.

132. (B) 1, 2, 3 and 4 only
International migration is driven by diverse factors, including geographic wage gaps, social networks, and the structural demand for labor in developed economies. It brings significant consequences for both sending and receiving nations. Receiving countries benefit from an increased labor supply, while sending countries receive vital remittances. However, migration also has profound demographic consequences, as it is often selective by age and sex, thereby altering the population structure of both the origin and.

133. (C) The emigration of highly educated and skilled individuals from a country.
Brain drain describes a specific form of international migration where a country experiences a significant loss of its most highly educated and skilled individuals. This typically occurs when professionals such as doctors, engineers, and scientists move to developed nations in search of better pay, superior working conditions, or more advanced research opportunities. While this benefits the destination country, it can deplete the human capital necessary for development and innovation in the origin.

134. (B) It fails to capture the reasons for migration.
While the census is a vital source of demographic data, it has notable limitations for migration analysis. One significant drawback is that it often fails to capture the underlying reasons for migration, as questions are primarily focused on the place of birth and last residence. Additionally, the decadal nature of the census means it misses many short-term or circular moves. Detailed information on motivations and personal circumstances usually requires specialized sample.

135. (A) Both Statement I and Statement II are correct.
Economic and social theories of urban formation highlight economies of scale and agglomeration as fundamental drivers of city growth. Agglomeration economies refer to the various benefits and cost savings that firms and

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Established communities of migrants, such as a large diaspora, provide crucial information, financial support, and social assistance to newcomers. This lowers the costs and risks for future migrants from the same community, creating a self-sustaining flow. The support provided by established Filipino communities to new migrants is a classic example of.

90. (B) 1, 2 and 3 only
August Lösch contributed to central place theory by introducing a more flexible and economically complex model than Christaller's. He assumed a uniform plain but rejected the idea of a strict, discrete hierarchy. His model produced a landscape of overlapping, non-uniform hexagonal market areas, recognizing that different goods could have different market reach. His primary focus was on explaining the overall economic spatial order rather than just finding the location for a.

91. (D) Suburbanization and counter-urbanization.
Following World War II, many developed countries experienced a significant demographic shift in their urban systems characterized by suburbanization and counter-urbanization. As transportation improved and preferences changed, large numbers of people moved from central cities to surrounding suburban fringes or smaller towns. This de-concentration of the population led to the expansion of metropolitan areas and a decline in the dominance of traditional city cores, marking a new phase in the urban.

92. (C) Statement I is correct, but Statement II is incorrect.
Dual Labour Market Theory posits that international migration is driven by the intrinsic labor demands of modern industrial societies rather than just individual wage gaps. These economies feature a primary sector with good jobs and a secondary sector with low-paying, unstable work. Migrants are typically recruited to fill jobs in the secondary labor market, which native workers often avoid. This structural demand for foreign labor remains a primary cause of international.

93. (C) Personal Factor - Government migration policy.
Migration decisions are influenced by various factors that push people from their origin or pull them toward a destination. Push factors include lack of jobs, while pull factors include higher wages. Intervening obstacles, such as travel costs or legal barriers, can hinder movement. Personal factors relate to the individual, like age or education. However, a government's migration policy is a macro-level structural factor or an intervening obstacle rather than a personal.

94. (A) P-3, Q-1, R-2, S-4
Urban geography features several influential models that explain the internal structure and spatial distribution of settlements. Ernest Burgess proposed the Concentric Zone Model, while Homer Hoyt developed the Sector Model. Harris and Ullman introduced the Multiple Nuclei Model to account for multiple centers of activity. In regional planning, Walter Christaller's Central Place Theory remains the foundational framework for understanding the hierarchical arrangement of settlements and the services they provide to.

95. (A) The Vital Statistics Method.
The Vital Statistics Method is an indirect technique for estimating net internal migration when direct flow data is unavailable. It utilizes the demographic balancing equation, which calculates migration as the residual of total population change after subtracting the natural increase. This natural increase is determined from registered data on births and deaths. Unlike census questions on birthplace or residence, which directly identify migrants, this method infers migration from other.

96. (B) Urban Sprawl
Urban sprawl refers to the low-density, often unplanned expansion of cities into surrounding rural areas. This process is visible in the rapid growth of residential complexes, IT parks, and edge cities on the outskirts of major Indian hubs like Bengaluru and Hyderabad. Sprawl is driven by increased car ownership, improved transportation, and the demand for more space, often leading to fragmented land use and increased pressure on infrastructure and environmental resources.

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over all others, often serving as the singular hub for the.

143. (A) Todaro - Impact of social networks.
Migration theories are associated with specific core concepts and proponents. Ernst Ravenstein noted that migration often occurs in steps, while Everett Lee highlighted the role of intervening obstacles. W. Arthur Lewis analyzed the transfer of surplus labor from agriculture to industry. However, Michael Todaro is primarily known for his work on expected income and urban unemployment, rather than the impact of social networks, which is the focus of Social Network Theory.

144. (B) P-2, Q-4, R-3, S-1
Migration theories can be categorized by their primary level of analysis. Neoclassical economic theory focuses on micro-level individual decisions, while the New Household theory examines the household or family unit. At the macro-level, Dual Labour Market theory emphasizes structural labor demands in destination countries, and World System theory analyzes the global political and economic structure. Together, these frameworks provide a comprehensive understanding of migration from both personal motivations and broad.

145. (A) Both Statement I and Statement II are correct.
George Zipf proposed the rank-size rule, which describes a mathematical regularity in urban systems. According to this rule, if cities are ranked by their population size, the population of the nth-ranked city will be approximately equal to the population of the largest city divided by n. This graduated hierarchy suggests a well-integrated and balanced urban system. The rule provides a standard for comparing different national urban structures and identifying deviations like.

146. (A) Multiple Nuclei Model
The Multiple Nuclei Model, developed by Harris and Ullman, posits that a large city does not grow from a single center but develops around several independent nodes of activity. These centers, such as a port, a university, or an industrial park, attract specific types of land use and residents. This model reflects the complexity of modern urban areas where multiple focal points shape the spatial organization and internal structure of the.

147. (C) Dual Labour Market Theory
Dual Labour Market Theory suggests that international migration is initiated and sustained by the structural labor requirements of modern industrial nations. It argues that native workers are often unwilling to take low-status, unstable, and low-paying jobs in the secondary labor market. Consequently, employers in these countries actively recruit foreign workers to fill these essential roles. In this framework, migration is driven primarily by the internal economic needs of the destination.

148. (D) 1, 2, 3, 4 and 5
Refugees present complex implications for host countries, encompassing social, economic, political, and legal dimensions. While they may strain local infrastructure and social services, they also contribute to the labor force and national economy. Host nations have moral and legal obligations under international conventions, including the principle of non-refoulement. Managing these challenges requires balancing humanitarian commitments with diplomatic considerations and the long-term social and cultural integration of displaced populations into the.

149. (C) The evolution of cities is often linked to technological, economic, and social changes.
The evolution and growth of urban settlements are dynamic processes fundamentally linked to broader technological, economic, and social transformations. Throughout history, the functions and physical forms of cities have changed as societies moved from agrarian to industrial and then to information-based economies. Innovations in transportation and communication have consistently reshaped how cities are organized and how far they expand. Urban growth is rarely a uniform or entirely planned process.

150. (B) Economic, Social, and Environmental
Urban sustainability is a multifaceted concept that aims to balance the development of cities with long-term ecological and social health. It primarily integrates three core dimensions: economic viability, social equity, and

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individuals receive by locating near each other in a concentrated area. These advantages include a larger labor pool, better access to specialized suppliers, and the rapid exchange of ideas. Such efficiencies encourage the concentration of economic activities and.

136. (A) Both A and R are true and R is the correct explanation of A.
The Todaro model argues that migration remains a rational choice even in the face of high urban unemployment. This is because potential migrants base their decision on the expected urban income, which accounts for both the higher urban wage and the probability of obtaining a job. If this expected value is greater than the certain but lower income available in rural areas, an individual will choose to move, explaining continued rural-urban.

137. (C) The decline of the urban informal sector.
Urbanization in developing countries brings a wide range of socio-economic consequences, including significant challenges for the elderly, environmental issues, and pressure on health and housing. It is also closely associated with the rapid growth of the urban informal sector, which provides livelihoods for many newcomers. It is incorrect to suggest that the informal sector declines during urbanization; rather, it often expands to absorb workers that the formal labor market cannot accommodate.

138. (A) Zelinsky's Mobility Transition Model
Wilbur Zelinsky's Mobility Transition Model provides a framework for understanding how human movement evolves alongside a society's modernization and demographic changes. It describes a progression from traditional societies with very limited mobility to transitional phases with high rural-to-urban migration. Eventually, in advanced societies, mobility shifts toward complex inter-urban and intra-urban patterns. This model links spatial behavior directly to the stages of economic and demographic development, highlighting how modernization fundamentally transforms how people move.

139. (D) A shift towards de-concentration, with migration from large cities to suburbs and smaller towns (counter-urbanization).
In many developed countries during the post-World War II era, the relationship between urbanization and migration shifted toward de-concentration. This trend, known as counter-urbanization, involved the movement of population and economic activity away from large metropolitan centers toward suburbs and smaller towns. Improved transportation, communication technology, and changing residential preferences fueled this shift. Unlike earlier stages of rapid centralization, this period was marked by the expansion of metropolitan regions and.

140. (B) 2 and 3 only
Migration theories operate at different levels of analysis, from individual choices to global structures. Dual Labour Market Theory and World System Theory primarily focus on macro-level factors. They explain migration as a result of the structural labor demands in developed economies or the expansion of global capitalism into peripheral nations. Unlike neoclassical or new household theories, which emphasize individual or family decisions, these macro-level frameworks highlight the broader political and.

141. (C) The Vital Statistics Method (or Balancing Equation)
The Vital Statistics Method, also known as the demographic balancing equation, is an indirect way of estimating net migration. It uses the formula where the population at the end of a period is the initial population plus natural increase and net migration. By rearranging this formula, net migration is calculated as the total population change minus the natural increase. This method is valuable when reliable records of births and.

142. (D) Mark Jefferson
Mark Jefferson introduced the concept of the primate city in nineteen-thirty-nine to describe a city that is exceptionally large and overwhelmingly dominant within its country. He argued that such a city is expressive of national capacity and feeling, concentrating a disproportionate share of population, wealth, and influence. This concept highlights a specific type of urban hierarchy where one center towers

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158. (D) Estimation of lifetime migration rates from census data
Migration estimation methods are classified as direct or indirect based on the data used. Direct measures utilize specific questions about birthplace, previous residence, or duration of stay found in censuses or surveys. For example, lifetime migration rates are calculated directly from birth and enumeration locations. Indirect methods, like the Vital Statistics or Survival Ratio techniques, infer migration by analyzing changes in population counts after accounting for other factors like births, deaths, or.

159. (A) Zelinsky
Wilbur Zelinsky proposed the Mobility Transition Model to explain how migration patterns change as a society undergoes development and modernization. He argued that these spatial shifts are systematically linked to the stages of the demographic transition. As a society moves from traditional to advanced stages, mobility evolves from limited local circulation to massive rural-urban movement and eventually to complex inter-urban flows. This model provides a comprehensive framework for linking migration to broader.

160. (D) Statement I is incorrect, but Statement II is correct.
The National Growth Rate Method is an indirect technique for estimating net migration for a sub-national region. It calculates net migration as the difference between the region's actual observed population growth and the growth that would be expected if it grew at the same rate as the nation as a whole. This method assumes that the rate of natural increase is uniform across the country, attributing any regional deviation to the.

161. (B) Often linked to agricultural seasons or marriage.
Migration streams are classified by their origin and destination, each often linked to specific life events or economic patterns. Rural-to-rural migration, particularly among women in India, is frequently associated with marriage. It can also be driven by seasonal agricultural work, where laborers move between rural areas during different harvest periods. Understanding these streams is essential for analyzing the diverse social and economic motivations that drive human movement within and across different.

162. (C) 1, 2, 3 and 4 only
Urbanization in developing countries brings a complex mix of economic opportunities and social challenges. While it leads to the concentration of activities and job creation, it often results in severe housing shortages and the growth of slums. High population density strains basic amenities like water and sanitation. Although urban areas generally offer better access to specialized services, the rapid and unplanned nature of growth frequently prevents an equitable distribution of income among all.

163. (B) The historical and ongoing disruption of periphery societies by the penetration of global capitalism.
World System Theory explains international migration as a consequence of the penetration of global capitalist markets into peripheral societies. This process disrupts traditional economic and social structures, creating a mobile workforce that is often drawn toward core nations. In this view, migration is not just an individual choice but a result of the structural imbalances within the global economy. People move from the periphery to the core as a natural response to.

164. (D) The goods and services they provide to a surrounding hinterland.
Walter Christaller's Central Place Theory is based on the fundamental principle that settlements are organized in a hierarchical system to provide goods and services. A central place serves a surrounding hinterland, with larger settlements offering a wider range of specialized functions than smaller ones. This hierarchy is determined by the threshold population and the range of the goods provided. The model explains the spatial distribution of towns based on their.

165. (B) The movement of populations from central cities to suburbs and smaller towns.
In many developed countries, the relationship between urbanization and migration has entered a phase of de-concentration known as counter-urbanization. This contemporary pattern involves the movement of population away from large, congested metropolitan centers toward suburbs, smaller towns, and rural areas. This

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shift is enabled by improved transportation and communication technologies, as well as a search for better quality of life. It represents a significant change from the earlier stages of rapid urban.

166. (C) 1, 2 and 3 only
The urban informal sector in developing nations is characterized by small-scale, labor-intensive operations that are often unregulated and unregistered. Ease of entry for workers and the absence of formal contracts or social security are its defining features. While it provides essential livelihoods for many urban newcomers, it is not fully integrated into the formal, regulated economy. Instead, it operates on the margins, absorbing workers who cannot find employment in the formal.

167. (D) Stouffer's Theory of Intervening Opportunities
Samuel Stouffer's Theory of Intervening Opportunities posits that the number of people migrating a given distance is related to the number of opportunities at that distance. More importantly, it is inversely related to the number of opportunities that exist between the origin and the destination. If a migrant finds a suitable job or housing at an intermediate location, they are less likely to continue their journey to a more distant destination.

168. (A) Both Statement I and Statement II are correct.
The Reverse Survival Ratio Method is an indirect demographic technique used to estimate the population of a region at a past census date. It works by applying survival ratios backward from a more recent census count. This method is also valuable for estimating the number of births that occurred during an inter-censal period and for calculating net migration for specific cohorts, particularly those born between the two census enumerations being studied by.

169. (C) Multiple Nuclei Model
The Multiple Nuclei Model, proposed by Harris and Ullman, describes a city's internal structure as developing around several distinct focal points rather than a single center. These nodes, such as an industrial estate, a university campus, or a regional shopping mall, attract related activities and residential development. This model reflects the complexity of large, modern urban areas where different functions and land uses are organized around multiple centers of activity and specialized.

170. (A) National Sample Surveys provide more detailed information on the reasons for migration than the census.
Migration data is gathered from various sources, each with specific strengths and weaknesses. National Sample Surveys provide more in-depth information on the specific reasons for moving and the socio-economic profiles of migrants than the national census. While the census offers a comprehensive count of the migrant stock, it often misses short-term or circular moves. Understanding these differences is essential for researchers to select the most appropriate data for analyzing diverse patterns of.

171. (D) The distribution of different functions (residential, commercial, industrial) across the urban space.
Land use patterns describe the functional distribution of different activities across an urban area, such as residential, commercial, industrial, and recreational zones. This spatial organization reflects how various social and economic forces compete for different locations within the city. Planners study these patterns to understand the internal structure of cities, manage urban growth, and ensure that essential services and infrastructure are logically situated to support the diverse needs of the urban.

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172. (B) An increase in remittances sent from the country.
International migration brings significant impacts to destination countries, including filling labor shortages and increasing cultural diversity. While it can strain social services if not managed effectively, it also contributes to economic growth and innovation. One consequence that does not directly affect the destination country's economy in a positive way is the increase in remittances sent out by migrants. These financial transfers represent a flow of money from the destination country back to.

173. (C) Proponents of the New Household Economic Theory
Proponents of the New Household Economic Theory argue that migration decisions are made by larger units of related people, typically families

or households, rather than by isolated individuals. This framework suggests that households send members to different locations as a collective strategy to diversify income sources and manage economic risks. By acting together, the household can overcome local credit constraints and ensure a more stable financial future through the receipt of migrant.

174. (B) 1, 2, 3 and 4 only
Several frameworks are used to analyze human movement at both the internal and international levels. These include Ravenstein's Laws, Zelinsky's Mobility Transition Model, Social Network Theory, and the Lewis-Fei-Ranis Model. These theories provide diverse perspectives on the economic, social, and demographic factors that drive migration. While Christaller's Central Place Theory explains settlement hierarchy and service distribution, it is not a theory specifically designed to explain the process and motivations of individual or.

175. (A) has a notified urban local body like a municipality or corporation.
In India, a statutory town is a settlement that has been formally notified as an urban area by the government and possesses a local governing body such as a municipal corporation or municipality. This administrative status distinguishes it from a census town, which is classified as urban based purely on demographic criteria like population size and density. All places with a formal urban local body are automatically considered statutory towns, regardless of their.

176. (A) Both Statement I and Statement II are correct.
Urban primacy and the rank-size rule represent two different patterns of urban hierarchy. A primate city distribution occurs when one city is overwhelmingly dominant, while the rank-size rule implies a graduated and integrated hierarchy of city sizes. Because urban primacy features one exceptionally large center that dwarfs all others, it is considered inconsistent with the mathematical regularity and balance predicted by the rank-size rule. These concepts help planners identify different stages of urban development.

177. (B) The shift in the majority of the world's urban population from developed to developing countries.
The changing distribution of the world's urban population refers to a major global shift observed in recent decades. While urbanization was once concentrated in developed nations, the majority of the world's urban dwellers now reside in developing countries. This trend reflects rapid urban growth and massive rural-to-urban migration across Asia, Africa, and Latin America. Analyzing this redistribution is essential for understanding global demographic changes and the future challenges of managing large-scale urban development.

178. (A) Net rural-to-urban migration.
Urban growth is driven by two primary demographic factors: the natural increase of the existing urban population and net rural-to-urban migration. As individuals move from villages to cities in search of better livelihoods and services, they contribute significantly to the expansion of urban centers. This migration, combined with the surplus of births over deaths within the city, determines the overall pace of urban expansion. Understanding both components is essential for effective urban planning.

179. (C) Stouffer's Theory of Intervening Opportunities
Samuel Stouffer's Theory of Intervening Opportunities explains why a migrant might choose a closer destination over a more distant one. If a nearby town offers suitable employment and services, it acts as an intervening opportunity that satisfies the migrant's needs while reducing the cost and risk of travel. This theory suggests that the volume of migration to a distant metropolis is inversely related to the number of acceptable opportunities available at shorter distances.

180. (D) Social factors like marriage and education play a significant role.
The determinants of internal migration are diverse and extend beyond purely economic factors. While the search for better wages and employment is a major driver, social factors such as marriage, education, and family ties play a significant role in the decision to move. Many people relocate to access better schooling or because of traditional social customs,

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locations, prompting individuals to move from low-wage to high-wage areas to maximize their income. In this framework, migration is an individual decision-making process where workers act as rational actors seeking the best economic return. This movement continues until wages across different regions reach an equilibrium, reflecting a perfectly functioning labor.

196. (D) The rank-size rule
The rank-size rule describes a specific type of urban hierarchy where city sizes follow a predictable mathematical pattern. In such a system, the population of a city is inversely related to its rank, so the second-largest city is half the size of the first, and so on. This graduated distribution suggests an integrated urban system with a balanced distribution of population and services. It contrasts with urban primacy, where a single city overwhelmingly dominates the nation.

197. (C) Transport principle
Walter Christaller identified three ordering principles to explain the spatial arrangement of central places. The K=4 principle is known as the transport principle, which optimizes the location of settlements along major transportation routes. In this arrangement, central places are situated to minimize the travel distance and costs for both producers and consumers. This principle creates a hierarchy where a higher-order center serves its own area and half of the population of six surrounding lower-order settlements.

198. (B) Lewis Model - Intervening opportunities.
Migration theories are linked to specific foundational concepts and scholars. The Todaro model focuses on expected income, and Everett Lee emphasizes push-pull factors and intervening obstacles. Wilbur Zelinsky developed the mobility transition model. However, the Lewis model is a dual-sector framework focused on the transfer of surplus labor from agriculture to industry. The concept of intervening opportunities was proposed by Samuel Stouffer, making it an incorrect association to link it with the Lewis model.

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199. (D) The set of cities in a given region or country and the relationships between them.
An urban system refers to the complex set of cities within a specific region or country and the diverse relationships between them. This concept emphasizes that cities do not exist in isolation but are interconnected through flows of people, goods, services, and information. Analyzing an urban system involves studying the hierarchy, spacing, and functional roles of different settlements. It provides a holistic framework for understanding how an entire network of urban areas functions and evolves.

200. (A) Both Statement I and Statement II are correct.
The Census Survival Ratio Method is an indirect technique used by demographers to estimate net migration for specific age and sex cohorts. It works by comparing the actual count of a cohort in a recent census with its expected size based on national survival ratios applied to an earlier census count. This method allows researchers to infer net movement without needing direct data on migrant flows, making it a valuable tool for analyzing population redistribution between.

201. (C) The importance of a settlement as a service and goods provider for its surrounding area.
In urban geography, centrality refers to the functional importance of a settlement as a provider of goods and services to its surrounding area. A town with high centrality serves as a focal point for a large hinterland, offering a wide range of specialized activities that smaller settlements cannot provide. Measuring centrality is essential for understanding the urban hierarchy and the spatial distribution of settlements, as it reflects the town's role as a regional service hub.

202. (A) Intervening obstacles
In Everett Lee's framework, intervening obstacles are the diverse factors that can hinder or complicate the process of migration. These include physical barriers, the distance between origin and destination, the financial cost of moving, and legal restrictions like migration policies. These obstacles act as a filter, meaning that even if strong push and pull factors exist, the volume of migration will be determined by how easily individuals can overcome these practical and systemic challenges.

188. (B) The surplus labor in the agricultural sector is fully absorbed by the industrial sector.
In the Lewis-Fei-Ranis dual-sector model, migration is the process of transferring surplus labor from a traditional agricultural sector to a modern industrial sector. This flow of workers is expected to slow down or stop once the surplus labor in rural areas is fully absorbed by urban industries. At this point, agricultural productivity begins to rise, and wages in both sectors start to equalize, marking a key transition in the country's economic development.

189. (C) The presence of a municipal corporation.
In the Indian census, a census town must meet specific demographic criteria to be classified as urban. These include a minimum total population of five thousand, a density of at least four hundred persons per square kilometer, and at least seventy-five percent of the male main working population engaged in non-agricultural activities. Unlike statutory towns, census towns do not require the presence of a municipal corporation or any other formal urban local governing body.

190. (D) Its main economic and social activities (e.g., administrative, industrial, commercial).
The functions of a settlement refer to its primary economic, social, and administrative activities that justify its existence and support its population. These roles can include serving as a center for industry, commerce, education, or government administration. Understanding a settlement's functions is essential for classifying urban areas and analyzing their place within the broader regional hierarchy. A town's function determines its relationship with its surrounding hinterland and its overall importance in the urban.

191. (A) August Lösch
August Lösch developed a more complex and flexible version of the central place model compared to Walter Christaller's original theory. He rejected the idea of a fixed hierarchy and instead allowed for non-fixed K-values and overlapping market areas of different sizes for different goods. His model recognized that the economic landscape is more varied, with specialized centers and varying market reaches, creating a more realistic spatial representation of how economic activities are organized.

192. (A) Both Statement I and Statement II are correct.
The Indian census identifies migrants using two distinct criteria that provide different perspectives on movement. Data on the place of birth identifies lifetime migrants, showing who has moved at least once since they were born. Data on the place of last residence captures more recent moves and can identify individuals who have moved multiple times. Together, these two measures offer a comprehensive picture of both the historical and contemporary redistribution of the population across space.

193. (B) Migration is age and sex selective, thus altering the demographic pyramids of both origin and destination.
Migration is a highly selective process that significantly impacts the demographic structure of both origin and destination areas. It is typically selective by age and sex, with young adults being the most mobile group. Consequently, migration alters the population pyramids of the regions involved, often leading to a higher proportion of working-age individuals in receiving areas and a potential shortage in sending regions. These demographic shifts have long-term implications for labor supply and dependency.

194. (A) Addressing long-term challenges like climate change, resource scarcity, and technological integration in cities.
The concept of the urban future focuses on the long-term challenges and opportunities facing cities in an era of rapid change. It addresses critical issues such as climate change, resource scarcity, and the integration of new technologies into urban management. This field of study explores how sustainable planning and innovative governance can create resilient cities that provide a high quality of life for future generations. It emphasizes proactive strategies to manage the complex evolution of urban.

195. (C) Geographic differences in labor supply and demand, resulting in wage differentials.
Neoclassical economic theory views labor migration as a response to geographic differences in labor supply and demand. These imbalances create wage differentials between various

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225. (B) The factors that make migration more difficult, such as distance, cost, and legal barriers.
In migration studies, intervening obstacles refer to the diverse factors that make the process of moving more difficult or costly. These can include physical barriers, large distances, the financial expense of travel, and legal or political hurdles such as restrictive migration policies. According to Everett Lee, these obstacles act as a filter, and the volume of migration is determined by the ability of potential migrants to overcome these challenges, regardless of the strength of push and pull factors.

226. (A) The activities are often unrecorded, making official measurement and analysis difficult.
A major challenge in studying the urban informal sector is that its activities are often unrecorded and operate outside formal government control. Because these economic functions are unregulated and unregistered, they are difficult to measure through standard statistical methods. This lack of official data complicates the analysis of urban labor markets and the development of effective policies to support workers in this sector. Despite its significance in providing livelihoods, the informal sector remains largely invisible in many official economic reports.

227. (C) Intervening obstacles
Everett Lee's migration framework emphasizes that the total volume of migration is directly influenced by the difficulty of surmounting intervening obstacles. Even when individuals are strongly pushed from their origin and pulled toward a destination, practical challenges like distance, travel costs, and legal barriers can prevent them from moving. These obstacles act as a critical deterrent, meaning that migration flows are not just a simple result of geographic imbalances but are shaped by the feasibility of the journey itself.

228. (D) Mortality
In demographic analysis and migration estimation, a survival ratio is a measure derived from mortality data. It represents the probability that a specific age and sex cohort will survive from one time point to another. These ratios are typically extracted from life tables or calculated by comparing age cohorts across successive censuses. By using survival ratios, researchers can determine the expected size of a population, attributing any difference from the actual count to the net impact of migration.

229. (C) Social Network Theory emphasizes the role of wage differentials as the sole cause of migration.
Various theories offer different perspectives on migration. The Lewis-Fei-Ranis model focuses on rural-to-urban labor transfer, while the Todaro model highlights the role of expected income and urban unemployment. Ravenstein established the early laws describing general migration characteristics. However, it is incorrect to say that Social Network Theory emphasizes wage differentials as the sole cause of movement. Instead, it focuses on how interpersonal ties and social structures between origin and destination facilitate and sustain migration flows over time.

230. (C) Statement I is correct, but Statement II is incorrect.
Urbanization presents unique challenges for the elderly, particularly regarding health, housing, and potential social isolation. In city environments, traditional family support systems may become less reliable due to smaller living spaces and changing work patterns. While these issues are significant, it is incorrect to assume that urbanization universally leads to the complete breakdown of family support. Many families find new ways to maintain ties, although the need for formal social and healthcare services for older urban residents typically increases.

231. (D) Between two successive censuses.
Inter-censal migration refers to the movement of individuals that occurs during the period between two successive census enumerations. Since censuses are usually conducted every ten years, this measure captures the net effect of migration over a decade. It is an important indicator for demographers to understand how populations redistribute themselves spatially within a country. By comparing decadal data, planners can identify long-term trends in regional growth and decline that are not explained by natural increase alone.

232. (A) Mobility Transition Model
The Mobility Transition Model, proposed by Wilbur Zelinsky, suggests that as a society modernizes, its patterns of human movement evolve through predictable stages. It describes

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203. (D) Cumulative Causation Theory
Cumulative Causation Theory provides a robust explanation for the self-perpetuating nature of migration flows. It suggests that each act of migration alters the social and economic context, creating networks and support systems that make subsequent movement easier. As more people move, the barriers for those remaining decrease, and migration becomes a structural part of the community's life. This feedback loop ensures that migration continues even if the original economic motivations, like wage gaps, change.

204. (B) Rural-urban migration contributes significantly to the population growth of cities.
In developing countries, migration and urbanization are deeply interconnected processes. Rural-to-urban migration is a primary driver of city growth, as individuals relocate in search of better economic opportunities and social services. This continuous influx of people, combined with the natural increase of the urban population, significantly accelerates the pace of urbanization. Understanding this relationship is crucial for urban planning, as migration flows shape the demand for housing, infrastructure, and services in rapidly expanding urban centers.

205. (C) Dual Labour Market Theory
Dual Labour Market Theory explains international migration by highlighting the structural demand for foreign labor in developed economies. These societies have segmented labor markets where native workers often avoid unstable, low-paying, and low-status jobs in the secondary sector. Consequently, employers must recruit migrants to fill these essential roles in sectors like agriculture and construction. In this view, migration is driven by pull factors and the internal economic requirements of the receiving country's labor market.

206. (D) A universal improvement in housing conditions for all residents.
Urbanization in developing nations brings a mix of opportunities and significant challenges, including pressure on basic amenities and the growth of an informal economy. While it provides centralized health and education services, it often leads to acute housing shortages and the proliferation of slums. It is incorrect to claim that urbanization results in a universal improvement in housing for all; in reality, many new residents find themselves in substandard conditions due to the lack of affordable formal.

207. (A) Place of birth and place of enumeration.
The lifetime migration rate is a demographic measure typically calculated using census data on an individual's place of birth and their current place of enumeration. A person is identified as a lifetime migrant if these two locations are different. This rate provides a cumulative view of how much a population has moved since birth, although it does not capture the timing, frequency, or intermediate stages of the migration process within the person's life history.

208. (C) Statement I is correct, but Statement II is incorrect.
Walter Christaller's Central Place Theory is a normative model that seeks to explain the number, size, and spatial distribution of settlements based on their role as service providers. It assumes that consumers are rational and will travel to the nearest central place that offers a desired good. The model describes a hierarchical arrangement of towns, where people visit different levels of settlements depending on the specialized nature of the goods and services they need.

209. (B) Neoclassical Economic Theory
Neoclassical economic theory posits that labor migration is primarily driven by geographic wage differentials between two locations. These differences result from imbalances in labor supply and demand. Individuals, acting as rational actors, move from low-wage areas to high-wage areas to maximize their income. This process is expected to continue until wages in both locations reach equilibrium. In this framework, migration is an individual decision aimed at personal economic betterment within a perfectly functioning market environment.

210. (C) The process has ended in most developing countries.
The process of urbanization involves a fundamental shift in a society's economic structure from agriculture toward industry and services, accompanied by social and cultural changes. It is measured by the increasing percentage of the population living in urban areas. Far from ending, urbanization continues

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highlighting the complex mix of personal and structural influences that shape human mobility within a country's.

181. (C) Social Network Theory
Social Network Theory emphasizes the role of interpersonal ties in facilitating and sustaining migration flows. When early migrants establish themselves in a new area, they create social links between the sending and receiving locations. These networks provide crucial support, such as information, financial help, and assistance with housing and jobs, to future migrants from their home community. This process reduces the barriers to movement, making migration a self-perpetuating social process over time.

182. (B) Its primary goal is to encourage urban sprawl.
A smart city utilizes advanced information and communication technologies to improve operational efficiency, enhance urban governance, and provide a better quality of life for its residents. Its core goals include promoting sustainability and managing urban resources more effectively. Contrary to encouraging urban sprawl, smart city initiatives often focus on creating more compact, efficient, and well-connected urban environments. The use of data and technology aims to solve urban problems rather than expanding low-density.

183. (D) The arrangement of settlement parts in physical space and the relationships between them.
Spatial organization refers to the arrangement of different parts of a settlement in physical space and the functional relationships between them. It involves analyzing how various land uses, buildings, and transportation networks are situated and connected to support the activities of the residents. Understanding spatial organization is essential for urban geography and planning, as it reveals how the physical environment is structured to facilitate economic, social, and administrative interactions within the settlement and.

184. (A) Both Statement I and Statement II are correct.
The hierarchy of world cities is a dynamic structure that changes as the global economy and capital flows evolve. Cities like London and New York maintain high positions due to their concentration of global financial services, but new centers can rise as economic power shifts. This global hierarchy reflects the uneven integration of cities into worldwide financial networks, with their status being determined by their role in coordinating and controlling international economic activities.

185. (C) Vital Statistics Method.
The Vital Statistics Method is an indirect demographic technique used to estimate net internal migration for a specific area. It calculates the total population change between two time points and then subtracts the natural increase, which is the total number of births minus the total number of deaths. Any remaining difference is attributed to net migration. This balancing equation is a fundamental tool for demographers to understand population redistribution when direct migration data is.

186. (A) A shift from family-based care to a greater need for formal social and health support systems.
Urbanization brings significant social changes, particularly for the elderly population as traditional family support structures often weaken in city environments. In many urban areas, there is a marked shift from family-based care toward a greater reliance on formal social and health support systems. The high cost of living, smaller living spaces, and changing work patterns can lead to social isolation for older residents, necessitating specialized urban services and policies to ensure their.

187. (D) Circulation - A seasonal agricultural laborer's annual move for harvesting.
Human mobility is classified into different types based on the duration and nature of the movement. Circulation describes repetitive, short-term movements that do not involve a permanent change of residence, such as a seasonal agricultural worker's annual move for harvesting. In contrast, international migration involves moving across national borders, while internal migration occurs within a single country. Commutation refers to daily travel between home and work. Distinguishing these patterns is vital for accurate demographic.

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economically attractive. This model highlights the importance of perceptions and labor market probabilities.

218. (A) Large-scale suburbanization and the growth of metropolitan areas.
After World War II, many developed nations experienced significant demographic and social shifts in their urban systems, most notably large-scale suburbanization. Improved transportation, particularly the rise of car ownership, and a desire for more living space led to the massive growth of metropolitan fringes. As people and economic activities moved out of central cities, traditional urban cores experienced a decline in population density. This process reshaped the urban landscape, creating expansive and interconnected metropolitan areas.

219. (D) Rank-Size Rule Theory
International migration is analyzed through various theoretical frameworks that explain why people move across borders. These include Dual Labour Market Theory, World System Theory, and Social Network Theory, which focus on structural economic demands and social ties. However, the rank-size rule is a model of urban hierarchy that describes the mathematical relationship between a city's population and its rank within a national system. It is not a theory designed to explain the causes or processes of international migration.

220. (B) The daily, periodic movement between a place of residence and a place of work or study.
Commutation describes a specific type of human mobility characterized by the regular, periodic movement between an individual's place of residence and their place of work or education. Unlike migration, commutation does not involve a change of residence. It is a daily or weekly cycle enabled by transportation networks, allowing people to live in one area while accessing opportunities in another. This pattern is a hallmark of modern metropolitan living, where residential suburbs and central business districts are functionally linked.

221. (C) Re-urbanization
The cycle of urbanization is a model describing the historical stages of urban development. It begins with urbanization, followed by suburbanization and counter-urbanization. The final stage is re-urbanization, where population growth returns to the central city after a period of decline. This revitalization is often driven by gentrification and urban renewal projects that attract residents back to the core. This cycle highlights the dynamic and potentially repetitive nature of population shifts within metropolitan systems over time.

222. (D) The Social Network Theory
Social Network Theory explains how established migrant communities facilitate further movement by providing essential support to newcomers. The existence of social ties, such as family and friends in a specific destination like Vancouver, lowers the costs and risks for new migrants from the same origin. These networks offer valuable information, financial assistance, and help with finding housing and employment. This process makes migration self-perpetuating, as each move strengthens the links between the two locations.

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223. (A) Both Statement I and Statement II are correct.
Internal migration involves human movement within a country's borders, such as from rural villages to cities. While it does not change the nation's total population, it fundamentally redistributes people across different regions. This spatial shift affects the population size, demographic structure, and economic potential of sub-national areas. Analyzing internal migration is essential for regional planning, as it helps identify areas experiencing rapid growth or decline, allowing for the appropriate allocation of resources and services within the country.

224. (B) Migration can lead to 'brain drain' in the country of origin and 'brain gain' in the country of destination.
Migration brings significant consequences to both sending and receiving regions. One major impact is the potential for brain drain in the country of origin, as highly skilled professionals move abroad for better opportunities. Conversely, the receiving country experiences a brain gain by acquiring this talent. Additionally, international migrants send back remittances, which are a vital source of income for families and foreign exchange for their home countries. These complex outcomes highlight the dual-sided demographic and economic nature of migration.

to be a major trend in most developing countries, as cities expand and more people relocate from rural areas. Understanding this ongoing transformation is essential for planning sustainable urban futures globally.

211. (C) Increased surface runoff and risk of urban flooding.
A significant environmental impact of urban growth is the extensive replacement of natural, permeable land with non-porous surfaces like asphalt and concrete. This leads to a marked increase in surface runoff because rainwater can no longer soak into the ground. Consequently, urban areas face a much higher risk of flooding, as existing drainage systems are often overwhelmed during heavy rainfall. This process also reduces groundwater recharge, further complicating the long-term sustainability of urban water resources.

212. (D) A well-founded fear of persecution for reasons of race, religion, nationality, etc.
According to the nineteen-fifty-one Convention, a refugee is defined by a well-founded fear of persecution based on specific characteristics such as race, religion, nationality, or political opinion. This fear compels them to cross an international border for safety. Unlike economic migrants, who move voluntarily for better financial opportunities, refugees are forced to flee. This legal status grants them international protection, including the right of non-refoulement, which prevents them from being returned to a place of danger.

213. (C) 0.5 million
The Vital Statistics method estimates net migration by analyzing the balancing equation of population change. In this scenario, the total population increased by two million over ten years. During this period, the natural increase, which is births minus deaths, was one point five million. By subtracting the natural increase from the total population change, the remaining difference of zero point five million is attributed to net migration, indicating that more people moved into the area than left.

214. (B) The ranking of cities within a country or region based on size or functional importance.
The urban hierarchy refers to the systematic ranking of cities and towns within a country or region based on their population size or functional importance. This structure reflects how settlements are organized to provide different levels of goods and services. Higher-order settlements are fewer and farther apart, offering more specialized functions, while lower-order settlements are more numerous and provide everyday services. Analyzing this hierarchy helps planners understand the spatial organization and integration of the regional urban.

215. (D) Analysis of census data on place of last residence
Direct methods of migration estimation utilize specific data from census or survey questions that identify individuals as migrants. This includes analyzing responses about the place of last residence, the duration of stay in the current location, or the place of birth. By directly counting these individuals, researchers can determine the volume and direction of human movement. This contrasts with indirect methods, which infer migration as a residual after accounting for natural population changes like births and deaths.

216. (D) Statement I is incorrect, but Statement II is correct.
The hierarchy of world cities reflects an uneven concentration of global capital institutions, such as major stock exchanges and international banks. Rather than being evenly distributed, these command and control functions are clustered in a few key urban centers like London, New York, and Tokyo. These cities provide the advanced infrastructure and specialized services required to coordinate the global economy. This concentration allows world cities to exert significant influence over international financial flows and multinational business operations.

217. (C) Todaro - Rational choice based on expected, not actual, wage differential.
The Todaro model introduces the concept of expected income to explain migration from rural to urban areas. It posits that individuals act rationally by comparing their current rural income with the urban wage multiplied by the probability of obtaining a job. This means that people may choose to migrate even when urban unemployment is high, provided the potential for significantly higher earnings makes the risk

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a shift from local circulation in traditional societies to massive rural-urban flows during early development. Later, in advanced societies, mobility is characterized by high levels of inter-urban and intra-urban movement. This model directly links changes in spatial behavior to broader economic and demographic transitions, providing a comprehensive framework for analyzing the evolution of.

233. (C) Measuring the average age of the population.
Measuring the centrality of a central place involves various methods that assess its functional importance as a service hub. These can include counting the number of telephone connections, analyzing the volume of bus traffic, and evaluating the range of goods and services provided to the surrounding area. These measures reflect the town's role as a focal point for interaction and service delivery. However, the average age of the population is a demographic characteristic and not a measure of centrality.

234. (A) World System Theory
World System Theory posits that the global economy is divided into core, semi-periphery, and periphery countries. According to this framework, international migration is a natural consequence of the penetration of capitalist markets into peripheral societies. This process disrupts traditional economies, creating a mobile workforce that moves toward core nations where capital is concentrated. Migration is thus seen as a structural result of the dynamic relationships and imbalances within a unified global political and economic system rather than just individual choices.

235. (D) Each data source, like the Census or NSS, has specific strengths, coverages, and limitations.
Migration data sources, such as the census and national sample surveys, provide valuable insights into human mobility, but each has specific strengths and limitations. The census offers a comprehensive count of the migrant stock, while sample surveys provide detailed information on motivations and socio-economic profiles. No single source captures all forms of mobility perfectly, making it essential for researchers to use a combination of direct data and indirect estimation methods to develop a complete and nuanced understanding of movement.

236. (B) 'Smart' technologies are seen as a key tool for achieving a more sustainable and efficient 'urban future'.
The concepts of the urban future and the smart city are closely linked because technological innovation is seen as essential for achieving sustainable urban development. Smart technologies, such as data analytics and interconnected systems, are tools used to improve efficiency, reduce resource consumption, and enhance the quality of life in cities. By addressing long-term challenges through technology, smart city initiatives aim to create more resilient and efficient urban environments that can meet the needs of future generations in a sustainable way.

237. (C) It is disproportionately larger than any other city in the urban system.
A primary characteristic of a primate city is that it is disproportionately larger and more influential than any other city within a country's urban system. This dominance is not only in terms of population size—often being several times larger than the second-ranked city—but also in its concentration of economic, political, and cultural activities. Primate cities often serve as the singular national hub, creating a top-heavy hierarchy that deviates significantly from the more balanced distribution predicted by the rank-size.

238. (A) Both Statement I and Statement II are correct.
Walter Christaller's administrative principle, represented by K=7, suggests a hierarchy where a higher-order central place exerts complete control over its own area and six surrounding lower-order settlements. This model is designed for efficient governance and the provision of public services, ensuring that administrative boundaries do not overlap or leave gaps. Each central place in this system serves as the primary hub for its hinterland, creating a rigid and organized spatial structure that facilitates clear lines of authority.

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239. (A) Michael Todaro
Michael Todaro developed an influential model which argues that migration is a rational response to the gap between rural income and the expected urban income. Unlike earlier models focusing on actual wages, Todaro emphasized that migrants account for the probability of obtaining an urban job. This explains why people continue to move

balanced distribution of urban centers across a country's territory.

272. (B) a city that is significantly larger and more dominant than any other in the nation.
A primate city is defined by its overwhelming size and influence relative to other cities in the same country. It is disproportionately larger than the second-ranked city and serves as the primary hub for economic, political, and cultural activities. This pattern of primacy is often found in nations where development has been highly centralized or influenced by colonial history.

273. (D) Suburbanization.
Suburbanization is a specific stage in the cycle of urbanization characterized by population growth on the outer fringes of a city. This movement often involves residents relocating from the urban core to peripheral areas, leading to the expansion of residential zones outside the traditional city limits. It reflects shifting lifestyle preferences and improvements in transportation that allow for longer commutes.

274. (A) a concentration of urban population growth in developing countries.
Since the end of World War II, a major global demographic shift has occurred, with the locus of urban growth moving toward developing nations. These regions now contain the majority of the world's urban dwellers and the fastest-growing metropolitan areas. This trend highlights the rapid pace of urbanization in the Global South compared to the more stabilized developed countries.

275. (C) Countries with a history of centralized administration or colonial focus.
The emergence of a primate city is frequently linked to historical factors such as centralized governance or colonial legacies. In these contexts, resources, infrastructure, and administrative functions were often concentrated in a single location to facilitate control or trade. This historical concentration created a dominant urban center that continues to grow faster and more significantly than other regional cities.

276. (A) Job insecurity and low wages.
The urban informal sector is a major source of employment in many cities, particularly in developing nations. It is characterized by precarious working conditions, including a lack of formal contracts and social protection. Workers in this sector typically earn low wages and face high levels of job insecurity, making them vulnerable to economic fluctuations despite their contribution to urban activity.

277. (D) Significant deficits in housing, water, and healthcare access.
Rapid urbanization in developing countries often places an overwhelming demand on existing infrastructure. This strain typically results in major shortages of essential services, including affordable housing, clean water, and sanitation. Furthermore, access to healthcare and other public amenities often fails to keep pace with population growth, leading to significant social inequalities and poor health outcomes for urban residents.

278. (B) using technology to improve urban efficiency and sustainability.
Smart city initiatives represent a contemporary planning response to the challenges of modern urbanization. These projects utilize advanced technology and innovative governance to enhance the efficiency of urban services. The goal is to improve the quality of life for residents while simultaneously reducing the environmental footprint of the city, creating a more sustainable and viable future for urban environments.

279. (C) Air pollution, waste management crises, and loss of green spaces.
Unchecked urban growth leads to several severe environmental issues that threaten local and global sustainability. These include the degradation of air and water quality due to increased industrial and domestic activity. Additionally, cities often face crises in managing solid waste and experience the significant loss of green spaces, which further exacerbates the environmental impact of dense human settlements.

280. (D) include both challenges like informal employment and opportunities for economic activity.
Urbanization presents a complex mix of socioeconomic outcomes. While it creates significant challenges, such as the growth of

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247. (D) Statement I is incorrect, but Statement II is correct.
The New Household Economic Theory of migration argues that decisions to move are made by larger units of related people, typically families or households, rather than isolated individuals. It posits that migration is a collective strategy designed to diversify income sources and manage economic risks. By sending members to different locations, households can protect themselves against local financial failures and overcome credit constraints through remittances. This perspective shifts the focus from individual wage maximization to family-level resilience and.

248. (A) Economic activities that are legal but are unregulated, unregistered, and outside government control.
The urban informal sector consists of economic activities that are legally permissible but operate outside the formal systems of government regulation, registration, and taxation. It is characterized by small-scale, labor-intensive operations with ease of entry for workers. People in this sector often lack formal contracts and social security protections. Despite its lack of formal status, the informal sector is a vital part of the urban economy in developing nations, providing livelihoods for a large portion of the migrant workforce.

249. (C) Gentrification
Gentrification is a specific process of urban renewal where a deteriorating, low-income inner-city neighborhood is transformed into a higher-income residential or commercial area. This reinvestment usually involves the displacement of the original, lower-income residents as property values and rents rise. While it can lead to improved infrastructure and the revitalization of urban cores, it also raises significant social concerns regarding equity and the loss of affordable housing. This process reflects changing residential preferences and the influx of wealthier urbanites.

250. (A) Cumulative Causation Theory
Cumulative Causation Theory suggests that migration is a self-perpetuating process where each act of movement creates social and economic structures that facilitate further migration. As migrants establish networks and ties in destination areas, they lower the barriers and risks for future movers from their home community. This feedback loop makes migration progressively more likely over time, regardless of the original economic factors that triggered the flow. In this view, migration becomes an ingrained part of the social.

251. (B) At least 75 percent of the female main working population engaged in non-agricultural pursuits.
The classification of Census Towns in India relies on specific empirical thresholds involving population size, density, and workforce composition. These criteria require a minimum of five thousand inhabitants and a density exceeding four hundred people per square kilometer. Crucially, the non-agricultural employment criterion specifically pertains to the male main working population rather than the female working population.

252. (A) Diverse national administrative, historical, and demographic contexts.
Different nations utilize unique parameters to define urban areas because their development paths are shaped by specific local factors. These definitions often incorporate varying administrative structures, unique historical growth patterns, and distinct demographic characteristics. Consequently, a single global standard is impractical as each country must account for its own internal socioeconomic realities and varying historical governance frameworks.

253. (C) A settlement designated as urban through an act of legislature, such as a municipality.
Statutory Towns are urban areas defined by their administrative status rather than specific demographic metrics. These settlements are officially recognized through legal mechanisms or acts of legislature. Examples include entities governed by a municipal corporation, cantonment board, or notified town area committee. This administrative classification exists independently of the empirical criteria used to identify Census Towns.

254. (D) The decennial population census.
Urbanization trends and patterns in India are primarily monitored through the extensive data collected during the decennial population

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289. (D) structural forces of global capitalism and segmented labor markets.
World System Theory and Dual Labor Market Theory analyze migration through a structural lens. They argue that movement is a direct result of the expansion of global capitalism, which disrupts traditional societies and creates a mobile population. Furthermore, wealthy nations often have segmented labor markets that generate a specific, ongoing demand for low-skilled migrant labor, which drives international migration flows.

290. (A) a set of empirical generalizations observed from migration data.
Ravenstein's laws represent fundamental observations regarding the patterns and regularities found in human movement. These principles were derived from empirical data and suggest that most migration occurs over short distances and in sequential stages. They also note that every major migration stream produces a corresponding counter-current, providing a foundational framework for understanding the basic dynamics of migratory flows.

291. (C) Lifetime migration.
Lifetime migration is estimated by comparing an individual's place of birth with their location at the time of a census. If these two locations differ, the person is classified as a lifetime migrant. This direct measure provides a long-term perspective on population movement, although it does not capture intermediate moves or the specific timing of the relocation during the person's life.

292. (A) total population change minus natural increase.
The Vital Statistics Method is an indirect technique used to estimate net migration for a specific region. It calculates this by taking the total change in population between two census periods and subtracting the natural increase, which is the difference between births and deaths. Any remaining population change that cannot be explained by births or deaths is then attributed to migration.

293. (D) Using a census question about the place of last residence.
Direct measures of migration involve using specific data collected from census or survey questions. Asking individuals about their place of last residence or their location at a fixed date in the past allows demographers to track movements directly. This method provides clear information about the origins and destinations of migrants, provided the census data is accurate and the coverage is comprehensive.

294. (B) The expected population of a cohort and the actual enumerated population of that cohort.
The Survival Ratio Method estimates net migration by focusing on specific age and sex cohorts. It uses survival rates to project how many people from a certain group should still be present in the next census. The difference between this expected population and the actual number of people enumerated in that cohort during the census is then used to calculate migration.

295. (C) When direct data from census questions on migration are unavailable or inadequate.
Demographers employ indirect measures when primary data from migration-specific census questions are missing or of poor quality. Methods like the Vital Statistics or Survival Ratio approaches allow for the estimation of net migration using more commonly available data, such as total population counts, births, and deaths. These techniques are essential for analyzing population dynamics in regions with limited administrative resources.

296. (D) By lowering the costs and risks through information and support.
Social Network Theory explains how interpersonal ties between migrants and non-migrants facilitate movement. These networks act as a form of social capital, providing potential migrants with essential information, financial aid, and social support. By reducing the uncertainty and the financial burden of moving, these networks make migration a self-sustaining process that continues even if the original causes change.

297. (A) is a self-perpetuating process where migration begets more migration.
The Theory of Cumulative Causation describes migration as a dynamic process that changes the social and economic context of both origin and destination areas. Each act of migration makes subsequent movements more likely by creating a culture of migration or altering local income

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263. (C) Settlements form a structured system based on function and interdependence.
The principles of centrality and hierarchy suggest that the spatial organization of settlements is not random. Instead, it forms a structured system where different places are linked through functional interdependencies. Larger, more complex urban centers provide specialized services to smaller settlements within their vicinity. This creates a predictable arrangement based on the variety and level of services offered.

264. (D) The wider surrounding area served by a settlement.
A hinterland is the geographical region that falls under the influence of a specific settlement. This surrounding area relies on the central settlement for various economic, social, and administrative services. The size and complexity of a hinterland are typically determined by the functions and services provided by the settlement, reflecting the level of interdependence between urban and rural spaces.

265. (A) Increased complexity in its internal structure and functions.
As a settlement transitions from a small village to a large city, its internal organization undergoes significant transformation. This evolution results in a more intricate morphology, encompassing diverse street patterns and building arrangements. Furthermore, the land use patterns become more specialized and the economic functions expand to serve both the local inhabitants and a wider surrounding hinterland.

266. (B) The minimum population required to support the service.
In the context of Central Place Theory, the threshold represents the smallest population size necessary for a service to be economically viable. Different types of goods and services require different thresholds; for example, a high-order service like a university needs a much larger population base than a low-order service like a small grocery store to remain operational.

267. (B) To provide the most efficient model for minimizing travel distances.
Walter Christaller utilized a hexagonal lattice in his model to illustrate the most efficient geometric arrangement for central places. This shape ensures that the entire service area is covered without gaps or overlaps while minimizing the distance consumers must travel to access goods. It represents a theoretical ideal for maximizing accessibility and efficiency within a hierarchical system of settlements.

268. (A) They offer more specialized services and are more widely spaced.
Higher-order centers in the urban hierarchy are characterized by their ability to provide specialized, high-threshold goods and services. Because these services require a larger population base and a greater range, such centers are fewer in number and are located further apart from one another. This contrasts with lower-order centers, which provide everyday goods and are more numerous.

269. (C) Lösch's model allowed for a more complex and varied economic landscape.
August Lösch expanded upon earlier central place models by adopting a bottom-up approach that considered individual industry networks. His framework moved away from a rigid, uniform hierarchy toward a more realistic and varied economic landscape. By allowing for multiple hierarchies and specialized production centers, Lösch provided a more flexible understanding of how urban systems develop in diverse environments.

270. (D) Low-order central place.
A small village offering basic, everyday services like a single grocery store or post office is categorized as a low-order central place. These settlements have small thresholds and ranges, meaning they serve only the immediate local population. In a hierarchical system, they are the most numerous settlements and are located close together to provide essential daily needs.

271. (C) There is an inverse relationship between a city's population size and its rank.
The rank-size rule describes a specific mathematical relationship within a national urban system. It suggests that a city's population is inversely proportional to its rank in the hierarchy. For example, the second-ranked city would ideally have half the population of the largest city. This pattern reflects a relatively

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census. This comprehensive survey captures vital information regarding the growth of urban settlements, the shifting proportion of urban dwellers, and changing demographic characteristics. It remains the essential resource for researchers and policymakers tracking natural increase and rural-to-urban migration flows.

255. (C) A large village meeting the criteria for a Census Town in a new census.
Reclassification occurs when a previously rural settlement is redefined as urban based on shifting socioeconomic characteristics. A clear example is a large village being designated as a Census Town after reaching specific population and density thresholds. This process differs from natural population growth or migration, as it reflects a change in the administrative or statistical status of the locality.

256. (B) Large-scale rural-to-urban migration.
In developing nations, the rapid expansion of urban areas is primarily driven by the movement of people from rural regions to cities. This large-scale migration serves as the main engine of urbanization, as individuals seek perceived economic opportunities. This trend often results in highly concentrated urban growth, distinguishing it from the more complex population redistribution patterns seen in developed countries.

257. (D) The proliferation of informal settlements.
The rapid pace of rural-to-urban migration in developing countries often exceeds the capacity of cities to provide adequate infrastructure. As a result, many new arrivals find themselves living in informal settlements. These areas typically lack basic amenities and reflect the intense pressure on urban resources caused by the growth of the informal sector and concentrated population increases.

258. (A) Counter-urbanization.
Contemporary migration patterns in developed countries include a phenomenon where residents move away from large, densely populated cities. This process is known as counter-urbanization and involves people relocating to smaller towns or rural environments. Such movements are frequently driven by lifestyle preferences, environmental considerations, and life-cycle changes rather than being solely motivated by the search for industrial employment.

259. (C) By lifestyle preferences and environmental quality.
Migration in developed countries has evolved beyond simple economic motivations to include more complex social factors. Individuals often make relocation decisions based on their desire for a specific lifestyle or a higher quality of environment. These non-economic drivers, such as seeking cleaner surroundings or better recreational opportunities, play a significant role in the redistribution of population within urbanized systems.

260. (A) Managing population redistribution and revitalizing urban cores.
Urban policy in developed nations focuses on addressing the challenges of a highly urbanized society where growth has stabilized. Key objectives often involve managing the redistribution of the population through processes like counter-urbanization. Additionally, policies are directed toward re-urbanization, which aims to revitalize city centers that may have experienced previous decline, ensuring sustainable development within existing urban structures.

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261. (D) Its physical form, including street patterns and building layout.
Morphology describes the physical structure and spatial arrangement of a settlement. This concept encompasses the layout of streets, the arrangement of buildings, and the overall shape of the urban or rural area. As settlements grow and evolve, their morphology becomes increasingly complex, reflecting the historical, economic, and social forces that have shaped their physical development over time.

262. (B) Land use pattern.
The spatial distribution of various activities within a settlement is referred to as its land use pattern. This involves the specific designation of areas for residential, commercial, industrial, or recreational purposes. Understanding these patterns is essential for urban planning, as they reveal how different functions are organized and how various parts of the city interact with one another.

an informal sector with job insecurity, it also provides essential employment opportunities and economic vibrancy. Cities serve as hubs for innovation and activity, meaning the process of urban growth encompasses both the strain on amenities and the potential for improved economic livelihoods.

281. (A) Commutation.
Commutation refers to the regular, often daily, journey that individuals make between their place of residence and their place of work or study. It is a specific form of circulation that does not involve a permanent change of home. This type of mobility is essential for understanding urban dynamics, as it reflects the spatial relationship between residential and functional zones.

282. (B) A change in the usual place of residence.
The fundamental difference between migration and other forms of mobility is the requirement for a change in an individual's usual place of residence. While circulation involves temporary or repetitive movements, migration signifies a long-term or permanent relocation. This distinction is vital for demographic studies, as migration directly alters the population distribution and residential statistics of different administrative regions.

283. (B) Internal migration.
Internal migration occurs when individuals or families move from one region to another within the same country. Moving between different states, such as from Bihar to Maharashtra with the intent to settle, exemplifies this process. This type of movement does not involve crossing national borders, but it often reflects broader socioeconomic trends, such as people seeking better opportunities in different regions.

284. (A) difficulty in capturing short-term and undocumented movements.
A major challenge in studying migration is the limitation of available data sources like censuses and surveys. These tools often fail to accurately record short-term circulation, seasonal movements, or illegal and undocumented migration. Consequently, the resulting data may provide an incomplete or underestimated picture of population dynamics, as many forms of mobility occur outside of official administrative tracking.

285. (C) Circulation.
Circulation encompasses short-term, repetitive, or cyclical movements that do not involve a permanent change of residence. A shepherd moving flocks between seasonal pastures is a classic example of this type of mobility. Because the individual maintains their original permanent home and the movement is part of a routine cycle, it is distinguished from migration, which requires a long-term relocation.

286. (D) Global climate change patterns.
Everett Lee's model provides a structured framework for understanding the decision to migrate by focusing on four primary components. These include push factors at the origin, pull factors at the destination, and intervening obstacles that might hinder movement. Additionally, personal factors unique to the individual influence the final decision. This model focuses on regional and individual dynamics rather than global environmental patterns.

287. (C) 'expected' income rather than actual wage differentials.
The Todaro model enhances neoclassical economic theory by introducing the idea of expected income. This concept suggests that potential migrants are rational actors who consider not just the higher wages in a city, but also the probability of actually securing a job. This explains why migration continues even when urban unemployment is high, as the perceived potential gain remains attractive.

288. (B) New Household Economic Theory.
New Household Economic Theory shifts the focus of migration decisions from the individual to the collective family unit. It argues that households decide to send members to other locations to diversify their income sources and minimize economic risks. In this view, migration is a strategic family choice aimed at maximizing total household income and ensuring financial stability against local economic shocks.

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to cities even when urban unemployment is high. The decision is based on the potential for higher earnings, making migration economically sound if the expected income.

240. (B) Urban Centrality - The total population living within city limits.
Urban geography involves several distinct concepts used to analyze settlements. Morphology focuses on the physical structure and layout, while hierarchy refers to the ranking of cities by size and importance. Urban functions describe the economic and administrative roles of a city. However, urban centrality is not defined by the total population within city limits. Instead, it refers to the importance of a settlement as a service and goods provider for its surrounding hinterland and its regional influence.

241. (B) Counter-urbanization
Counter-urbanization is a demographic and social process where people and economic activities move away from large, congested metropolitan areas toward smaller towns and rural locations. This trend, often observed in developed nations, represents a net migration loss from city centers. It is driven by factors such as improved transportation, the search for a better quality of life, and the ability to work remotely. Unlike suburbanization, which focuses on the city's fringes, counter-urbanization involves a more distant.

242. (A) National Growth Rate Method
The National Growth Rate Method is an indirect technique for estimating net migration for a sub-national area like a state. It calculates migration as the difference between the region's actual population growth and the growth expected if it followed the national average rate. This method assumes that the rate of natural increase is uniform across the country. By comparing these two values, researchers can infer the net effect of people moving into or out of the specific region.

243. (C) Political party affiliations in urban areas
Urbanization leads to a wide range of significant consequences, including the growth of the informal sector, pressure on housing and basic amenities, and challenges for the elderly population. It also encompasses critical environmental and sustainability issues. While urban environments can influence social behavior, the specific political party affiliations of urban residents are not typically considered a core demographic or social consequence studied within the standard framework of urbanization and its impact on infrastructure, health, education, and the broader economic.

244. (D) World Cities
World cities are defined by their integration into the global economy and their role as command nodes for international finance and business. This classification is primarily based on the concentration of global capital institutions, such as major stock exchanges, international banks, and transnational corporate headquarters. These cities host the advanced producer services required to coordinate and control worldwide economic activities. Their influence is global in scale, making them the central hubs for the management and flow of global.

245. (C) Its accuracy depends heavily on the completeness and accuracy of birth and death registration.
The Vital Statistics Method is a prominent indirect approach for estimating net migration using the demographic balancing equation. Its accuracy is critically dependent on the completeness and reliability of birth and death registration for the area being studied. If vital statistics are undercounted or inaccurate, the resulting migration estimate will also be flawed. This method infers migration as a residual, meaning that any errors in the recorded natural increase will directly affect the calculation of how many people moved.

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246. (B) Everett S. Lee
Everett Lee proposed a comprehensive framework for migration that highlights four primary categories of influence: factors at the origin, factors at the destination, intervening obstacles, and personal factors. This push-pull model suggests that the decision to move is based on the balance of these positive and negative attributes, as perceived through the lens of individual characteristics. By accounting for obstacles like distance and cost, Lee's theory provides a more nuanced understanding of why migration occurs between specific locations.

distributions. This results in a self-perpetuating cycle where the migration process itself becomes a catalyst for further movement.

298. (B) Cumulative Causation.
Cumulative Causation refers to the phenomenon where initial migration triggers changes in the sending region that encourage even more people to leave. For example, out-migration might lead to a depletion of human capital or shifts in the local economy that make staying less attractive. This process ensures that migration flows persist over time as the social environment increasingly favors relocation abroad.

299. (B) continue even when the initial economic incentives weaken.
Theories of social networks and cumulative causation suggest that migration flows often become independent of their original triggers. Once networks are established and the social context has shifted, the momentum of migration can maintain flows even if economic gaps narrow or political conditions stabilize. This helps explain why certain migration patterns persist long after the initial push and pull factors have significantly diminished.

300. (A) social capital.
In the framework of Social Network Theory, interpersonal connections between current migrants, former migrants, and non-migrants function as a valuable resource. These ties serve as social capital by facilitating the exchange of vital information and support. Such resources effectively reduce the potential risks and financial burdens associated with moving, thereby making the migration process more accessible to others.

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CHAPTER 07

Population, Development and Environment

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1. Which of the following best describes the core focus of studying the interrelationship between population, environment, and development?
(A) Analyzing how population size primarily determines environmental quality and standards.
(B) Understanding the complex interactions and feedback loops between these three elements.
(C) Examining the long-term impact of development policies on regional population growth.
(D) Focusing on how environmental degradation directly limits sustainable economic development.

2. A primary limitation of using per capita income as the sole indicator of development is that it fails to account for:
(A) The distribution of income and quality of life.
(B) The overall economic output of a nation.
(C) The rate of inflation within the economy.
(D) The level of foreign direct investment.

3. Which of the following statements identifies a key principle of the 'investment in human capital' approach to development?
(A) It prioritizes the expansion of physical infrastructure over essential social services.
(B) It views expenditure on education and health as costs to be minimized.
(C) It views education and health as investments that enhance productivity and growth.
(D) It focuses on providing basic welfare benefits to the general population.

4. The Human Development Index (HDI) is a composite statistic that most appropriately measures development by combining which three dimensions?
(A) Per capita income, industrial output, and agricultural production.
(B) Political freedom, gender equality, and environmental quality.
(C) Urbanization rate, literacy rate, and life expectancy.
(D) A long and healthy life, knowledge, and a decent standard of living.

5. Match List I with List II regarding development indices and their primary focus.
List I: (Index)
P. Human Development Index (HDI)
Q. Physical Quality of Life Index (PQLI)
R. Gender Development Index (GDI)
S. Human Poverty Index (HPI)
List II: (Primary Focus)
1. Measures deprivation in basic human development.
2. Measures achievements in life expectancy, literacy, and infant mortality.
3. Measures gender inequalities in human development achievements.
4. Measures average achievement in key dimensions of human development.
Choose the correct option:
(A) P-4, Q-2, R-3, S-1
(B) P-1, Q-3, R-2, S-4
(C) P-4, Q-1, R-3, S-2
(D) P-2, Q-4, R-1, S-3

6. A country has a high life expectancy and a high literacy rate, but a very high infant mortality rate. According to the Physical Quality of Life Index (PQLI), how would this country's development be assessed?
(A) It would be ranked very high, as two of the three components are positive.
(B) Its PQLI score would be negatively impacted by the high infant mortality rate.
(C) The PQLI would not be applicable as it

requires all indicators to be uniform.
(D) The high literacy rate would completely offset the negative impact of infant mortality.

7. Which of the following is the most appropriate definition of 'social capital'?
(A) The total financial assets owned by social institutions in a country.
(B) Government funding allocated for social welfare programs and benefits.
(C) The physical infrastructure dedicated to community and social activities.
(D) The networks, norms, and trust that facilitate cooperation among groups.

8. Read the following statements regarding development goals and choose the correct option.
Statement I: The Millennium Development Goals (MDGs) were primarily focused on developing countries to address key development challenges.
Statement II: The Sustainable Development Goals (SDGs) are universal, applying to all countries and integrating economic, social, and environmental dimensions of development.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

9. The concept of 'sustainable development' is best understood as development that:
(A) Maximizes economic growth in the short term, irrespective of environmental costs.
(B) Halts all economic activity to preserve the environment in its pristine state.
(C) Meets present needs without compromising the ability of future generations.
(D) Prioritizes social equity over all other economic and environmental concerns.

10. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R).
Assertion (A): The Human Poverty Index (HPI) was developed to provide a more nuanced view of deprivation than income poverty alone.
Reason (R): HPI focuses on deprivations in the same three dimensions as the HDI – a long and healthy life, knowledge, and a decent standard of living.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

11. An effect of development, particularly improvements in healthcare and nutrition, on a country's population dynamics is a phenomenon known as:
(A) Age structure stagnation.
(B) Demographic stagnation.
(C) Population momentum collapse.
(D) Age structure transition.

12. Which of the following is an incorrect statement regarding the demographic transition model?
(A) It describes the historical shift from high birth and death rates to low birth and death rates.
(B) The transition invariably occurs at the same pace and in the same manner in all countries.
(C) The initial stage is characterized by high birth rates and high but fluctuating death rates.
(D) The final stage is characterized by low birth rates and low death rates, leading to stable population size.

13. The "demographic dividend" refers to the economic growth potential that can result from:
(A) A high proportion of the population being in the elderly age group.
(B) A rapid increase in both birth and death rates simultaneously.
(C) A shift in age structure towards a larger share of working-age people.
(D) Government policies that encourage higher fertility rates for expansion.

14. All of the following are characteristic features of population ageing EXCEPT:
(A) An increase in the median age of the population.
(B) A rising proportion of elderly persons in the total population.
(C) Potential strains on social security and healthcare systems.

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(D) An increase in the youth dependency ratio.

15. Read the following statements regarding historical views on population.
1. Greek philosophers held diverse views, with some advocating for population control to maintain stability.
2. The Chinese philosopher Confucius's writings suggest a concern for balancing population with available land resources.
3. Classical Mercantilist views generally favored large and growing populations to enhance state power.
4. Physiocrats believed agricultural surplus was the source of wealth, which could be impacted by population size.

Which of the above statements are correct?
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

16. What is the central argument of the pessimistic perspective on the relationship between population and development?
(A) Population growth stimulates innovation and economic progress.
(B) Population growth is an obstacle to development and depletes resources.
(C) Population change has no significant relationship with development outcomes.
(D) Population growth is a necessary precondition for industrialization.

17. According to the Malthusian theory of population, population tends to increase at a _____ rate, while food supply tends to increase at an _____ rate.
(A) arithmetic; geometric
(B) geometric; arithmetic
(C) equal; unequal
(D) linear; exponential

18. Identify the correct pair from the following perspectives on population.
(A) Julian Simon : Population is the 'ultimate resource' and fuels progress.
(B) Ester Boserup : Population growth is a major barrier to development.
(C) Thomas Malthus : Population growth stimulates agricultural innovation.
(D) Simon Kuznets : Population growth is always conducive to development.

19. The 'Tragedy of the Commons' illustrates a pessimistic view of population growth by arguing that:
(A) Technological innovation will always solve problems of resource scarcity.
(B) Government regulation of resources is inherently inefficient and should be avoided.
(C) Individuals acting in self-interest collectively deplete a shared resource.
(D) Common resources are best managed through privatization and market forces.

20. Consider the following thinkers and studies.
1. Thomas Malthus's "An Essay on the Principle of Population"
2. The "Limits to Growth" study by the Club of Rome
3. Ester Boserup's "The Conditions of Agricultural Growth"
4. Julian Simon's "The Ultimate Resource"

Which of the following represents the correct chronological order of their appearance or publication?
(A) 1, 3, 2, 4
(B) 1, 2, 3, 4
(C) 2, 1, 4, 3
(D) 3, 1, 2, 4

21. The Coale and Hoover study, representing a pessimistic perspective, primarily focused on the negative impact of rapid population growth on which aspect of development?
(A) Political stability
(B) Cultural preservation
(C) Savings and investment
(D) Technological advancement

22. Which of the following thinkers is most closely associated with the optimistic perspective that population growth can drive technological and social innovation, particularly in agriculture?
(A) Thomas Malthus
(B) Ester Boserup
(C) Paul Ehrlich
(D) Garrett Hardin

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23. Which of the following statements best represents the neutralist/revisionist perspective on population and development?
(A) Population growth is always the primary cause of underdevelopment.
(B) Population growth is always beneficial for economic development.
(C) There is no discernible relationship between population and development.
(D) The relationship is complex and dependent on social and economic context.

24. Thinkers like Simon Kuznets and Allan Kelly are associated with which perspective on the population-development nexus?
(A) Neutralist/revisionist
(B) Pessimistic
(C) Optimistic
(D) Pro-natalist

25. Consider the following statements related to the optimistic perspective on population growth.
1. Mercantilists viewed a large population as a source of national wealth and power.
2. Colin Clark argued that population growth could be a stimulus to economic progress.
3. Ester Boserup proposed that population pressure induces agricultural intensification and innovation.
4. Julian Simon famously argued that human intellect is the 'ultimate resource'.
5. Condorcet believed human ingenuity would overcome resource constraints posed by population growth.

Which combination of the above statements is correct?
(A) 1, 2 and 4 only
(B) 2, 3 and 5 only
(C) 1, 3, 4 and 5 only
(D) 1, 2, 3, 4, and 5

26. From the perspective of resource classification, solar and wind energy are categorized as:
(A) Renewable resources
(B) Non-renewable resources
(C) Capital resources
(D) Exhaustible resources

27. The concept of 'resource depletion' is most accurately applied to which of the following?
(A) The sustainable harvesting of timber from a well-managed forest area.
(B) The use of solar power for local electricity generation and storage.
(C) The cyclical flow of water in the global hydrologic cycle.
(D) Consuming non-renewable resources faster than they are replaced.

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28. Which of the following is an example of a non-renewable natural resource?
(A) Fisheries
(B) Coal
(C) Forests
(D) Fresh water

29. A rapid increase in the youth dependency ratio within a population can negatively affect capital resources primarily by:
(A) Increasing the national savings rate through household contributions.
(B) Immediately boosting the size of the experienced national labour force.
(C) Diverting funds from investment towards young population consumption.
(D) Reducing the overall market demand for basic household consumer goods.

30. Match List I with List II regarding different perspectives on population.
List I: (Thinker/School)
P. Malthus
Q. Julian Simon
R. Simon Kuznets
S. Mercantilists
List II: (Perspective)
1. Optimistic (conducive to development)
2. Neutralist/Revisionist
3. Pessimistic (obstacle to development)
4. Pro-natalist (for state power)
Choose the correct option:
(A) P-3, Q-1, R-2, S-4
(B) P-1, Q-3, R-4, S-2
(C) P-3, Q-2, R-1, S-4
(D) P-2, Q-4, R-3, S-1

31. In the context of human resources, the 'economically active population' includes:
(A) Both the employed and the unemployed who are available for work.
(B) Only those who are currently employed.
(C) Only those who are actively seeking

negative effect of population growth on savings.
4. Condorcet expressed an optimistic belief in human progress to overcome population challenges.

Which of the above statements are correct?
(A) 1 and 3 only
(B) 2 and 4 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

86. Which perspective would most likely view a large, young population as a potential 'demographic gift' or 'dividend' rather than a burden?
(A) Malthusian
(B) Pessimistic
(C) Neutralist/Revisionist, with qualifications
(D) Marxist

87. Resource scarcity can be best understood as a condition where:
(A) A resource is physically non-existent on Earth.
(B) A resource is evenly distributed across all populations.
(C) A resource is renewable and can never be depleted.
(D) The demand for a resource exceeds its available supply.

88. The demand for labour in an economy is primarily affected by all of the following EXCEPT:
(A) The overall level of economic activity.
(B) The technology used in production.
(C) The wage rate.
(D) The birth rate of the population.

89. A major implication of population growth for education systems is:
(A) A decrease in the number of students requiring schooling.
(B) A reduction in the pupil-teacher ratio.
(C) An increased need for schools, teachers, and educational materials.
(D) A shift in focus from primary to tertiary education only.

90. Consider the following statements about sustainable development.
1. It has three core, interlinked pillars: economic, social, and environmental.
2. It explicitly rejects the idea of economic growth.
3. It emphasizes inter-generational equity.
4. The concept was popularized by the Brundtland Commission report, "Our Common Future".
5. It is solely concerned with the preservation of wilderness areas.

Which combination of the above statements is correct?
(A) 1, 2, and 5
(B) 2, 3, and 5
(C) 1, 3, and 4
(D) 1, 2, and 4

91. The term 'climate change' is broader than 'global warming' because it includes:
(A) Long-term changes in temperature, precipitation, and wind patterns.
(B) Only the warming of the Earth's oceans.
(C) Only the cooling of the polar ice caps.
(D) Short-term, daily fluctuations in weather.

92. The creation of 'guidelines for environmental protection' at a national level is an example of:
(A) Human adjustment to ecological imbalance through policy.
(B) A purely natural response to environmental change.
(C) An international protocol.
(D) A pessimistic surrender to environmental degradation.

93. The Physical Quality of Life Index (PQLI) was developed as an alternative to per capita income and is composed of which three indicators?
(A) Per capita income, life expectancy, and education level.
(B) Gender equality, political freedom, and income distribution.
(C) Life expectancy at age one, infant mortality, and literacy rate.
(D) Health expenditure, environmental quality, and housing standards.

94. Which of the following is an example of 'social change'?
(A) The daily fluctuation of a stock market index.

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41. The process by which fertile land becomes arid, typically as a result of deforestation, drought, or inappropriate agriculture, is called:
(A) Soil salinity
(B) Soil erosion
(C) Land reclamation
(D) Desertification

42. The removal of topsoil by the physical forces of water and wind, faster than it can be formed, is known as:
(A) Deforestation
(B) Soil erosion
(C) Soil salinity
(D) Desertification

43. An 'ecological imbalance' can be caused by:
(A) Only natural factors like volcanic eruptions.
(B) Only human factors like pollution.
(C) Both natural and human factors.
(D) A state of perfect equilibrium in an ecosystem.

44. Which of the following best defines a 'sustainable human eco-system'?
(A) An urban environment with high population density and advanced technology.
(B) An agricultural system focused solely on maximizing short-term crop yields.
(C) An ecosystem that is completely free from any form of human intervention.
(D) An ecosystem where human activities ensure long-term environmental health.

45. Consider the following environmental degradation issues.
1. Air pollution from industrial and vehicular emissions.
2. The greenhouse effect leading to global warming.
3. Deforestation for agricultural expansion and urbanization.
4. Soil erosion due to improper land management.
5. Increased soil salinity from poor irrigation practices.

Which of these are consequences of human activities accelerated by population pressure?
(A) 1, 2 and 3 only
(B) 3, 4 and 5 only
(C) 1, 3 and 4 only
(D) 1, 2, 3, 4, and 5

46. The welfare approach to human-centered development primarily emphasizes:
(A) The direct provision of public services like health, education, and housing.
(B) Maximizing economic growth through industrialization.
(C) Encouraging private investment as the main driver of social progress.
(D) Deregulating markets to promote individual wealth creation.

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47. Identify the incorrect pair of concepts and their descriptions.
(A) Social Change : Significant alteration over time in behavior patterns and culture.
(B) Social Development : A process of planned social change designed to promote well-being.
(C) Sustainable Development : Meeting present needs without compromising future generations' ability to meet their needs.
(D) Social Capital : Financial wealth held by non-governmental organizations.

48. The Social Development Index (SDI) would be most concerned with which of the following sets of indicators?
(A) Gross Domestic Product, foreign exchange reserves, and stock market performance.
(B) Education levels, health outcomes, and social cohesion.
(C) Military strength, political influence, and territorial expansion.
(D) Industrial output, export volumes, and trade balance.

49. Which of the following is NOT a Millennium Development Goal (MDG)?
(A) Eradicate extreme poverty and hunger.
(B) Achieve universal primary education.
(C) Ensure environmental sustainability.
(D) Ensure sustainable consumption and production patterns.

50. Match List I with List II regarding environmental issues and their contributing factors.
List I: (Environmental Issue)
P. Global Warming
Q. Soil Erosion

68. The increasing concentration of salt in the upper layers of soil, often due to improper irrigation, is termed:
(A) Soil erosion
(B) Desertification
(C) Soil salinity
(D) Land subsidence

69. Human perception and adjustment to ecological imbalance involves:
(A) Ignoring environmental changes until a catastrophe occurs.
(B) Recognizing environmental problems and taking actions to mitigate them.
(C) Assuming that all environmental changes are natural and cannot be influenced.
(D) Exclusively relying on migration as the only solution to environmental stress.

70. Consider the following statements regarding the relationship between population and development.
1. The pessimistic view holds that population growth hinders development by straining resources.
2. The optimistic view, supported by thinkers like Julian Simon, suggests population growth can spur innovation.
3. The neutralist view argues that the relationship is complex and mediated by other factors like policy and institutions.
4. Malthus's theory is a foundational text for the optimistic perspective.
5. Ester Boserup argued that population pressure is a primary cause of agricultural stagnation.

Which of the above statement(s) is/are correct?
(A) 1, 2, and 3 only
(B) 1, 4, and 5 only
(C) 2, 3, and 4 only
(D) 1, 2, and 5 only

71. International protocols concerning environmental protection are primarily designed to:
(A) Promote unrestricted exploitation of natural resources.
(B) Encourage competition among nations over scarce resources.
(C) Provide a framework for individual countries to act in isolation.
(D) Foster international cooperation on global environmental issues.

72. In the Indian context, developmental plans and policies related to population and environment aim to:
(A) Integrate population stabilization with sustainable development.
(B) Promote population growth to increase the labour force.
(C) Achieve economic growth without any consideration for environmental impacts.
(D) Focus exclusively on environmental protection while ignoring development needs.

73. The shift in employment from agriculture-based to industry and service-based sectors is a structural change often associated with:
(A) Population decline and economic stagnation.
(B) Population growth and economic development.
(C) A stable, unchanging population structure.
(D) A return to subsistence farming practices.

74. The "human-centered development" paradigm is a shift away from a model that primarily focuses on:
(A) Social equity
(B) Environmental sustainability
(C) Human rights
(D) Gross National Product (GNP) growth

75. Match List I with List II regarding demographic concepts and their descriptions.
List I: (Concept)
P. Demographic Dividend
Q. Age Structure Transition
R. Demographic Transition
S. Population Ageing
List II: (Description)
1. The historical shift from high to low birth and death rates.
2. An increase in the median age and proportion of older persons.
3. The shift in the age distribution of a population towards the working ages.
4. The potential for economic growth from a large working-age population.

Choose the correct option:

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while Boserup was pessimistic.
(B) Malthus focused on industrial production, while Boserup focused on resource depletion.
(C) Malthus was a pro-natalist, while Boserup was a neutralist.
(D) Malthus saw population pressure leading to crisis; Boserup saw it inducing innovation.

60. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R).
Assertion (A): The neutralist/revisionist perspective challenged the simplistic conclusions of both strong pessimists and optimists.
Reason (R): Thinkers like Simon Kuznets argued that the link between population change and development is not universal but varies with social and economic context.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

61. Which of the following best represents the Socialist and Marxist view on population issues?
(A) Population growth is the root cause of all social problems, including poverty.
(B) A free-market economy will automatically balance population and resources.
(C) Strict population control is necessary for the transition to a socialist state.
(D) Poverty is caused by capitalist structures, not by population numbers.

62. The effect of demographic factors on savings and investments is a key concern for which type of resource?
(A) Natural resources
(B) Human resources
(C) Capital resources
(D) Renewable resources

63. The concept of 'labour force' as a quantitative aspect of human resources is defined as:
(A) The total population of a country.
(B) The population in the age group 15-59 years.
(C) All persons who are either employed or unemployed and seeking a job.
(D) Only individuals with formal sector employment.

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64. Unemployment that results from a mismatch between the skills available in the workforce and the skills demanded by employers is known as:
(A) Frictional unemployment
(B) Structural unemployment
(C) Seasonal unemployment
(D) Disguised unemployment

65. Consider the following statements about the effect of development on population.
1. Improved healthcare and sanitation lead to a decline in death rates.
2. Increased education and female empowerment are often correlated with a decline in fertility rates.
3. Urbanization can change family size norms and the economic roles of children.
4. Economic development leads to an age structure transition, often creating a demographic dividend.

Which of the above statements are correct?
(A) 1 and 2 only
(B) 1, 2, and 3 only
(C) 3 and 4 only
(D) 1, 2, 3, and 4

66. Which one of the following is a potential negative consequence of rapid population growth on the environment?
(A) Increased biodiversity
(B) Accelerated depletion of non-renewable resources
(C) Reforestation
(D) Reduction in greenhouse gas emissions

67. Pressure of population growth on land use can manifest as all of the following EXCEPT:
(A) Deforestation to create more farmland.
(B) Urban sprawl encroaching on agricultural land.
(C) Increased intensity of farming on existing land, leading to soil exhaustion.
(D) Soil conservation and afforestation programs.

R. Deforestation
S. Soil Salinity
List II: (Contributing Factor)
1. Improper irrigation practices
2. Clearing of forests for agriculture
3. Removal of topsoil by wind and water
4. Accumulation of greenhouse gases
Choose the correct option:
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-3, R-2, S-1
(C) P-4, Q-2, R-3, S-1
(D) P-3, Q-4, R-1, S-2

51. Population ageing is a direct demographic consequence of:
(A) Increasing fertility and increasing mortality.
(B) High and stable fertility and mortality rates.
(C) Increasing fertility and decreasing life expectancy.
(D) Decreasing fertility and increasing life expectancy.

52. The 'pro-natalist and prosperity argument' generally posits that:
(A) A large and growing population is beneficial for a nation's wealth and power.
(B) A smaller population leads to greater per capita wealth.
(C) Population growth is detrimental to national prosperity.
(D) Population size is irrelevant to economic prosperity.

53. Which school of thought strongly advocated for large populations to increase the state's military and economic power, viewing population as a form of national wealth?
(A) Physiocrats
(B) Marxists
(C) Mercantilists
(D) Malthusians

54. The writings of the Chinese philosopher Confucius are interpreted to suggest a concern for achieving:
(A) Maximum possible population size.
(B) A zero-growth population.
(C) A rapidly declining population.
(D) An optimum population size in relation to resources.

55. Consider the following perspectives on population.
1. Mercantilist pro-natalist views
2. Malthusian pessimistic views
3. Boserup's optimistic views
4. Neutralist/revisionist views of the late 20th century
Which of the following represents the correct chronological sequence of their emergence?
(A) 2, 1, 3, 4
(B) 1, 2, 3, 4
(C) 1, 3, 2, 4
(D) 4, 2, 1, 3

56. The 'Limits to Growth' study, commissioned by the Club of Rome, used computer simulations to argue that:
(A) Unlimited growth is possible with advanced technology.
(B) Exponential growth within a finite system would lead to collapse.
(C) Population growth is always beneficial for the economy.
(D) Environmental problems can be solved solely through market mechanisms.

57. Enke's investment model, a part of the pessimistic literature, argued that:
(A) High fertility rates stimulate national investment.
(B) Population growth has a neutral effect on investment patterns.
(C) Population control investment is more cost-effective than traditional development.
(D) All forms of government investment are inherently inefficient.

58. Which of the following statements about Colin Clark's view on population is correct?
(A) He was a leading proponent of the Malthusian perspective.
(B) He suggested population growth could stimulate development and density benefits.
(C) He argued that population growth acts as a depressant on economic progress.
(D) He advocated for strict government policies to limit population size.

59. A key difference between the views of Malthus and Ester Boserup is that:
(A) Malthus was optimistic about technology,

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(A) P-4, Q-3, R-1, S-2
(B) P-1, Q-2, R-3, S-4
(C) P-4, Q-1, R-3, S-2
(D) P-3, Q-4, R-1, S-2

76. Which development index specifically discounts the average achievement in human development according to the degree of gender inequality?
(A) Human Development Index (HDI)
(B) Physical Quality of Life Index (PQLI)
(C) Gender Development Index (GDI)
(D) Social Development Index (SDI)

77. The Human Poverty Index (HPI) differs from measures of income poverty by focusing on:
(A) The percentage of the population living on less than $1 a day.
(B) Deprivation in dimensions like longevity, knowledge, and standards.
(C) The gap between the richest and poorest quintiles of the population.
(D) The total national debt per capita.

78. The transition from Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs) represented a shift towards:
(A) A more narrow focus on poverty in the least developed countries.
(B) A universal, integrated, and more comprehensive agenda.
(C) A complete abandonment of social development targets.
(D) An exclusive focus on economic growth metrics.

79. The view that population growth is an obstacle to development is a cornerstone of which perspective?
(A) Optimistic
(B) Neutralist
(C) Pessimistic
(D) Mercantilist

80. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R).
Assertion (A): Technological advancements can play a crucial role in mitigating resource scarcity.
Reason (R): Technology can improve the productivity of physical assets, discover new resources, and create substitutes for depleted ones.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

81. Which type of unemployment is characterized by people working in a capacity where their marginal productivity is near zero?
(A) Disguised unemployment
(B) Frictional unemployment
(C) Seasonal unemployment
(D) Cyclical unemployment

82. The increasing pressure on urban housing, sanitation, and transport systems is a direct implication of:
(A) Population growth and rural-to-urban migration.
(B) Rural depopulation.
(C) A rapidly ageing population.
(D) A decline in the national birth rate.

83. The impact of human activities on ecological systems, such as pollution and deforestation, is referred to as:
(A) Natural ecological succession.
(B) Biotic potential.
(C) A pristine ecosystem state.
(D) Anthropogenic ecological imbalance.

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84. The Greek philosophers' views on population were primarily concerned with:
(A) Maintaining a stable and well-governed city-state.
(B) Maximizing population for military conquest.
(C) The religious imperative to be fruitful and multiply.
(D) Achieving rapid economic growth through population expansion.

85. Consider the following statements representing different viewpoints on population.
1. Physiocrats viewed population in relation to agricultural productivity.
2. Socialist thinkers attributed poverty to capitalist structures, not population size.
3. Coale and Hoover's study highlighted the

employment but are jobless.
(D) Full-time students and retirees.

32. What is 'disguised unemployment'?
(A) A situation where individuals are unemployed for short periods between jobs.
(B) Excess labor whose removal would not reduce total production output.
(C) Unemployment that occurs only during certain times of the year.
(D) Long-term unemployment due to structural shifts in the economy.

33. A construction worker who is jobless during the monsoon season is an example of:
(A) Frictional unemployment
(B) Disguised unemployment
(C) Seasonal unemployment
(D) Chronic unemployment

34. 'Frictional unemployment' is best described as:
(A) Unemployment caused by a recession or downturn in the business cycle.
(B) A mismatch between worker skills and the skills demanded by employers.
(C) Persistent inability of an economy to provide jobs for all who want work.
(D) Temporary unemployment experienced by individuals changing jobs.

35. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R).
Assertion (A): Rapid population growth can increase pressure on a country's food supply.
Reason (R): More people require more food, and if agricultural productivity does not increase at a corresponding rate, food shortages can occur.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

36. An increase in the labour supply, without a corresponding increase in labour demand, typically leads to:
(A) Higher wages and lower unemployment.
(B) Downward pressure on wages and higher unemployment.
(C) A shift in employment from the primary to the tertiary sector.
(D) An increase in the demand for skilled labour.

37. Which of the following is an incorrect statement about the implications of population growth?
(A) It increases the demand for housing, potentially leading to overcrowding.
(B) It places greater strain on public services like health and education.
(C) It can exacerbate problems of water scarcity and sanitation.
(D) It leads to an increase in per capita natural resource availability.

38. The accumulation of gases like carbon dioxide and methane in the atmosphere, which trap heat, is known as:
(A) The ozone layer depletion
(B) The greenhouse effect
(C) Acid rain formation
(D) Eutrophication

39. The gradual increase in the average temperature of the Earth's atmosphere and its oceans is termed:
(A) Global warming
(B) Climate shift
(C) Seasonal variation
(D) Thermal inversion

40. Consider the following statements about types of unemployment.
1. Disguised unemployment is common in the agricultural sector of developing economies.
2. Frictional unemployment is considered a short-term and natural part of a dynamic economy.
3. Seasonal unemployment affects industries like tourism and agriculture.
4. Chronic unemployment refers to a long-term, persistent lack of jobs.

Which of the above statements are correct?
(A) 1 and 3 only
(B) 2 and 4 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

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(B) The widespread adoption of mobile phones and its impact on communication patterns.
(C) The seasonal migration of birds.
(D) The consistent enforcement of an existing law.

95. Consider the following international environmental and developmental milestones.
1. Publication of "Limits to Growth"
2. Brundtland Commission Report "Our Common Future"
3. Adoption of the Millennium Development Goals (MDGs)
4. Adoption of the Sustainable Development Goals (SDGs)

Which of the following represents the correct chronological sequence?
(A) 1, 2, 3, 4
(B) 2, 1, 3, 4
(C) 1, 3, 2, 4
(D) 2, 1, 4, 3

96. The concept of 'demographic dividend' was particularly highlighted in the analyses of population and economic growth by which pair of thinkers?
(A) Malthus and Ricardo
(B) Bloom and Williamson
(C) Coale and Hoover
(D) Marx and Engels

97. An argument that population growth is conducive to development would most likely be made by:
(A) A follower of Malthus.
(B) A proponent of the 'Limits to Growth' model.
(C) An optimist like Julian Simon.
(D) A conservation biologist focused on species extinction.

98. Which of the following is NOT a type of capital resource in the context of development studies?
(A) Machinery and infrastructure
(B) Financial savings and investments
(C) Technological knowledge
(D) Untapped mineral reserves in the ground

99. The supply of labour in a country is most directly influenced by:
(A) The level of industrial automation.
(B) The population's size, age structure, and participation rates.
(C) The profitability of corporations.
(D) The country's foreign trade policy.

100. Match List I with List II regarding thinkers and their key ideas on population.
List I: (Thinker)
P. Ester Boserup
Q. Garrett Hardin
R. Robert Malthus
S. Allan Kelly
List II: (Key Idea)
1. Population grows geometrically, food supply arithmetically.
2. The Tragedy of the Commons.
3. Population pressure induces agricultural innovation.
4. The population-development link is complex and not universally negative.

Choose the correct option:
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-2, R-1, S-4
(C) P-3, Q-1, R-2, S-4
(D) P-2, Q-3, R-1, S-4

101. The transition from a young age structure to an older age structure is a key component of the:
(A) Economic cycle.
(B) Political transition.
(C) Resource depletion cycle.
(D) Age structure transition.

102. Which of the following is an example of a human factor causing ecological imbalance?
(A) The release of industrial effluents into a river
(B) A tsunami
(C) A volcanic eruption
(D) An earthquake

103. Development plans in India that link environmental protection with population strategies reflect an understanding of:
(A) The complete separation of these three domains.
(B) The primacy of population growth over all other concerns.
(C) The idea that environmental protection is a luxury for developed nations only.
(D) The intricate interrelationships between

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(B) The efficient and sustainable use of a resource.
(C) The consumption of a resource faster than it is replenished.
(D) The equal distribution of a resource among a population.

161. A worker laid off from a steel mill that closed down due to foreign competition and who lacks the skills to work in the growing IT sector is an example of:
(A) Frictional unemployment
(B) Seasonal unemployment
(C) Chronic (or structural) unemployment
(D) Disguised unemployment

162. The environmental issue of 'desertification' primarily concerns the degradation of:
(A) Air quality
(B) Water bodies
(C) Land in arid and semi-arid areas
(D) Forest ecosystems in temperate zones

163. The concept of the 'demographic dividend' is most closely linked to which part of the demographic transition?
(A) The early stage with high birth and death rates.
(B) The stage where the working-age population grows faster than the dependent population.
(C) The late stage with low birth and death rates and an ageing population.
(D) The pre-transitional stage.

164. What is the main argument of Enke's investment model?
(A) That investment in heavy industry is the best way to develop an economy.
(B) That spending on population control yields a higher economic return than conventional investments.
(C) That population growth boosts investment by increasing consumer demand.
(D) That investment should be determined purely by free market forces.

165. Consider the following statements about different views on population.
1. Mercantilists were pro-natalist, seeing population as a source of state power.
2. Malthus was pessimistic, fearing population would outstrip food supply.
3. Marxists viewed poverty as a product of capitalism, not overpopulation.
4. Julian Simon was optimistic, viewing people as the ultimate resource.
5. Greek philosophers were exclusively focused on maximizing population.

Which combination of the above statement(s) is/are correct?
(A) 1, 2, 3, and 4 only
(B) 1, 2, and 5 only
(C) 3, 4, and 5 only
(D) 1, 2, 3, 4, and 5

166. Which development indicator is calculated using life expectancy, education (mean and expected years of schooling), and GNI per capita?
(A) Physical Quality of Life Index (PQLI)
(B) Human Development Index (HDI)
(C) Human Poverty Index (HPI)
(D) Gender Development Index (GDI)

167. An important role of technology for capital resources is to:
(A) Deplete them more quickly.
(B) Improve the productivity of physical assets like machinery.
(C) Decrease the need for savings and investment.
(D) Replace human labour entirely.

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168. The total number of people who are either working or are actively looking for a job is called the:
(A) Total population
(B) Dependent population
(C) Labour force
(D) Unemployed population

169. Soil salinity as a form of environmental degradation is often a negative consequence of:
(A) Organic farming
(B) Drip irrigation techniques
(C) Poorly managed irrigation systems in arid regions
(D) Reforestation projects

170. Match List I with List II regarding development goals and concepts.
List I: (Goal/Concept)
P. Millennium Development Goals (MDGs)

outgoing thermal radiation.
(C) The ozone layer is depleted by CFCs.
(D) Acid rain damages forests and buildings.

113. A sustainable human eco-system requires that human activities are:
(A) Maximized for short-term economic gain.
(B) Balanced with the environment's capacity to support them.
(C) Completely separated from the natural environment.
(D) Focused on exploiting non-renewable resources exclusively.

114. The perspective that population change is not a primary driver of development, but rather its impact is mediated by other factors, is known as:
(A) The Mercantilist perspective.
(B) The Malthusian perspective.
(C) The Pro-natalist perspective.
(D) The Neutralist/revisionist perspective.

115. Consider the following statements about indices of development and poverty.
1. The HDI combines indicators for health, education, and standard of living.
2. The PQLI uses infant mortality, life expectancy at age one, and literacy.
3. The GDI adjusts the HDI for gender inequality.
4. The HPI measures deprivation in the same dimensions as the HDI.
5. The SDI aims to capture broader aspects of social well-being beyond economic measures.

Which combination of the above statement(s) is/are correct?
(A) 1, 2 and 3 only
(B) 2, 3, 4 and 5 only
(C) 1, 3 and 5 only
(D) 1, 2, 3, 4, and 5

116. The final stage of the demographic transition is characterized by:
(A) High birth rate and high death rate.
(B) Low birth rate and low death rate.
(C) High birth rate and low death rate.
(D) Low birth rate and high death rate.

117. The classical Mercantilist view on population was predominantly:
(A) Anti-natalist, favoring small populations.
(B) Pro-natalist, favoring large populations.
(C) Neutral, considering population irrelevant.
(D) Pessimistic, viewing population as a burden.

118. Which statement best represents Julian Simon's optimistic view?
(A) Human ingenuity and technological progress, spurred by more people, can solve resource problems.
(B) Population growth inevitably leads to resource depletion and famine.
(C) The relationship between population and development is non-existent.
(D) Only a centrally planned economy can manage population growth effectively.

119. A key effect of demographic factors on savings is that a higher dependency ratio (more children and elderly) tends to:
(A) Increase the rate of household savings.
(B) Have no effect on savings patterns.
(C) Lower the rate of household savings due to higher consumption needs.
(D) Increase investment in capital-intensive industries.

120. Match List I with List II regarding terms and their definitions.
List I: (Term)
P. Disguised unemployment
Q. Seasonal unemployment
R. Frictional unemployment
S. Chronic unemployment
List II: (Definition)
1. Temporary joblessness when moving between jobs.
2. Long-term joblessness due to structural factors.
3. Joblessness that occurs at certain times of the year.
4. Excess labor whose removal would not reduce total output.

Choose the correct option:
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-3, R-2, S-1
(C) P-4, Q-3, R-1, S-2
(D) P-3, Q-4, R-1, S-2

121. The pressure of population growth on energy resources manifests as:

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population, development, and environment.

104. Which statement accurately reflects the limitation of per capita income as a development measure?
(A) It can mask significant inequalities in wealth distribution within a society.
(B) It provides a comprehensive picture of individual well-being and access to services.
(C) It accurately measures the sustainability of a country's economic growth.
(D) It is a perfect measure of the non-monetary aspects of quality of life.

105. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R).
Assertion (A): Pessimistic theories argue that rapid population growth in developing countries can hinder capital formation.
Reason (R): A large, young, dependent population requires significant expenditure on consumption and social services, diverting resources that could otherwise be saved and invested.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

106. The 'investment in human capital' approach would advocate for increased government spending on:
(A) Military hardware.
(B) Education and healthcare.
(C) Subsidies for luxury goods.
(D) Construction of monuments.

107. Which index was designed to measure basic outcomes of development, explicitly avoiding monetary variables like income?
(A) Human Development Index (HDI)
(B) Gender Development Index (GDI)
(C) Gross National Income (GNI) per capita
(D) Physical Quality of Life Index (PQLI)

108. The concept of 'social change' encompasses alterations in:
(A) Social structures, cultural norms, and behavior patterns.
(B) Only the political structure of a society.
(C) Only the economic activities of a society.
(D) The physical environment, such as weather patterns.

109. What is a key difference between renewable and non-renewable resources?
(A) Renewable resources can replenish themselves within a human lifespan, while non-renewable resources cannot.
(B) Renewable resources are always man-made, while non-renewable resources are natural.
(C) Renewable resources are infinite in quantity, while non-renewable resources are finite.
(D) The use of renewable resources causes pollution, while non-renewable resources are clean.

110. Consider the following statements about resources.
1. Natural resources are materials and substances occurring in nature.
2. Capital resources include machinery and infrastructure built by humans.
3. Human resources refer to the skills, labor, and knowledge of the population.
4. Technology is considered a crucial element that enhances the productivity of other resources.

Which of the above statements are correct?
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

111. Which of the following scenarios best illustrates 'chronic unemployment'?
(A) A farm worker being jobless during the dry season.
(B) A software engineer being unemployed for three weeks while switching companies.
(C) A tour guide with no work during the off-season for tourism.
(D) A factory worker in a declining industry who has been jobless for over a year.

112. The term 'greenhouse effect' refers to the process where:
(A) Plants in a greenhouse grow faster.
(B) Certain gases in the atmosphere trap

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(A) Replace the Human Development Index entirely.
(B) Measure the absolute level of development for women only.
(C) Rank countries based on female political representation.
(D) Highlight gender-based disparities in human development achievements.

132. The Sustainable Development Goals (SDGs) differ from the MDGs in that they are:
(A) Less numerous and more focused.
(B) Applicable only to African nations.
(C) Solely focused on environmental issues.
(D) More comprehensive, integrated, and universally applicable.

133. According to the demographic transition theory, the phase of rapid population growth occurs when:
(A) The birth rate is high and the death rate is high.
(B) The birth rate falls significantly while the death rate remains high.
(C) The death rate falls significantly while the birth rate remains high.
(D) Both the birth rate and the death rate are low.

134. Identify the incorrect pair of thinker and their associated perspective.
(A) Julian Simon : Optimistic
(B) Thomas Malthus : Pessimistic
(C) Simon Kuznets : Neutralist/Revisionist
(D) Ester Boserup : Pessimistic

135. Consider the following stages of the demographic transition.
1. Low birth rate, low death rate, stable population.
2. High birth rate, declining death rate, rapid population growth.
3. Declining birth rate, low death rate, slowing population growth.
4. High birth rate, high death rate, stable or slow-growing population.

Which of the following represents the correct chronological sequence?
(A) 4, 2, 3, 1
(B) 1, 2, 3, 4
(C) 4, 3, 2, 1
(D) 2, 4, 1, 3

136. What is the effect of technological development on capital resources?
(A) It decreases the productivity of physical assets.
(B) It can improve the productivity of physical assets and lead to economic growth.
(C) It has no impact on savings and investments.
(D) It only affects human resources, not capital.

137. Which concept is NOT a quantitative aspect of human resources?
(A) Labour force
(B) Economically active population
(C) Social capital
(D) Unemployment rate

138. The increased demand for water for drinking, sanitation, and agriculture due to a growing population can lead to:
(A) Water abundance
(B) Water scarcity and depletion of aquifers
(C) A decrease in water pollution
(D) Natural replenishment of water sources

139. A country's development plans and strategies that incorporate population policies are acknowledging that:
(A) Population dynamics are irrelevant to development outcomes.
(B) Development can be planned without considering population trends.
(C) Population size and structure are important variables in planning for national development.
(D) Environmental issues are separate from population and development planning.

140. Consider the following implications of population growth.
1. Increased pressure on food supply and water resources.
2. Greater demand for housing, education, and health services.
3. Potential for increased unemployment if job creation lags.
4. Aggravation of environmental problems like pollution and deforestation.

Which of the above statements are correct?
(A) 1, 2, and 5 only

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(A) A decrease in overall energy consumption.
(B) A spontaneous shift towards renewable energy sources.
(C) The depletion of only renewable energy sources.
(D) An increasing demand for electricity, fuel, and other forms of energy.

122. Deforestation, the clearing of forests on a massive scale, is often driven by the need for:
(A) Preserving biodiversity.
(B) More land for agriculture and settlement.
(C) Creating carbon sinks.
(D) Reducing soil erosion.

123. The ability of humans to perceive an ecological imbalance and then develop strategies like conservation or new technologies to address it is an example of:
(A) Ecological collapse.
(B) The tragedy of the commons.
(C) Human perception and adjustment.
(D) A Malthusian catastrophe.

124. International protocols like the Kyoto Protocol or the Paris Agreement are examples of global cooperation to address:
(A) Local water pollution.
(B) National-level soil erosion.
(C) Disguised unemployment.
(D) Global climate change.

125. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R).
Assertion (A): The demographic dividend is not automatic.
Reason (R): For the economic potential of a large working-age population to be realized, there must be supportive policies in education, health, and governance to ensure the labor force is skilled, healthy, and can be productively employed.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

126. The view that poverty is a result of an unjust social and economic system rather than a consequence of overpopulation is central to:
(A) Malthusian theory
(B) Socialist and Marxist views
(C) Mercantilist doctrine
(D) The 'Limits to Growth' model

127. Which of the following is considered a human resource concept?
(A) Renewable and non-renewable resources
(B) Economically active population
(C) Savings and investments
(D) Resource scarcity

128. An implication of population growth on health services is the increased need for:
(A) Fewer hospitals and doctors.
(B) More healthcare infrastructure, personnel, and medical supplies.
(C) A focus only on geriatric care.
(D) A reduction in public health spending.

129. The concept of 'ecological imbalance caused by natural factors' would include which of the following events?
(A) An oil spill from a tanker.
(B) A major volcanic eruption that alters regional climate.
(C) Deforestation for cattle ranching.
(D) The construction of a large dam.

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130. Consider the following statements about the pessimistic perspective on population.
1. It views population growth as a major hindrance to development.
2. Thomas Malthus is a key early proponent of this view.
3. The 'Tragedy of the Commons' illustrates the problems of shared resources under population pressure.
4. The Coale and Hoover study emphasized the negative impact on savings and investment.

Which of the above statements are correct?
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

131. The primary purpose of the Gender Development Index (GDI) is to:

(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

151. Which index focuses on deprivation in a long and healthy life, knowledge, and a decent standard of living?
(A) Physical Quality of Life Index (PQLI)
(B) Gender Development Index (GDI)
(C) Social Development Index (SDI)
(D) Human Poverty Index (HPI)

152. Which thinker argued that population pressure is a key driver of agricultural intensification?
(A) Ester Boserup
(B) Thomas Malthus
(C) Julian Simon
(D) Simon Kuznets

153. A situation where a large part of the labor force is employed in agriculture, but their contribution to total production is very low or nil, is termed:
(A) Frictional unemployment
(B) Chronic unemployment
(C) Disguised unemployment
(D) Seasonal unemployment

154. Global warming is primarily caused by:
(A) The depletion of the ozone layer.
(B) The occurrence of acid rain.
(C) The dumping of plastic waste in oceans.
(D) The increased concentration of greenhouse gases in the atmosphere.

155. Consider the following statements about the neutralist/revisionist perspective.
1. It rejects the simplistic, deterministic views of both pessimists and optimists.
2. It argues that the relationship between population and development is complex and context-specific.
3. Simon Kuznets is a prominent thinker associated with this view.
4. It suggests that factors like government policy and institutions are crucial mediators.

Which of the above statements are correct?
(A) 1 and 3 only
(B) 2 and 4 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

156. The phrase "human perception and adjustment to imbalance" in an ecological context refers to:
(A) The innate ability of ecosystems to self-regulate without human influence.
(B) The process by which societies recognize environmental problems and take adaptive actions.
(C) A denial of the existence of human-caused environmental problems.
(D) The physical adaptation of human biology to polluted environments.

157. Which of the following is NOT a direct implication of rapid population growth on public services?
(A) Increased demand for school placements.
(B) Greater strain on healthcare facilities.
(C) Increased need for public housing.
(D) A guaranteed increase in the quality of services provided.

158. The 'age structure transition' describes the process where a population's age profile shifts from:
(A) Being dominated by old people to being dominated by young people.
(B) Having an equal number of people in all age groups.
(C) Being dominated by young people to having a larger proportion of working-age adults.
(D) Having a stable age structure to having a fluctuating one.

159. The optimistic perspective on population growth, as championed by Colin Clark and Ester Boserup, suggests that population pressure can lead to:
(A) Resource wars and societal collapse.
(B) Economic stagnation and widespread poverty.
(C) Innovation, intensification, and economic progress.
(D) A decline in human intelligence.

160. Which of the following best describes 'resource depletion'?
(A) The creation of a new resource through technology.

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180. Consider the following statements related to unemployment.
1. Frictional unemployment occurs when people are in between jobs.
2. Seasonal unemployment is linked to specific times of the year in certain industries.
3. Disguised unemployment happens when marginal productivity of labor is zero.
4. Chronic unemployment is a long-term problem, often linked to structural issues in the economy.

Which of the above statements are correct?
(A) 1 and 2 only
(B) 1, 2 and 3 only
(C) 3 and 4 only
(D) 1, 2, 3, and 4

181. The accumulation of excess salts in soil, often due to irrigation, is called:
(A) Deforestation
(B) Soil erosion
(C) Soil salinity
(D) Desertification

182. International environmental protocols serve as:
(A) Legally non-binding suggestions.
(B) Frameworks for cooperative action among nations on environmental issues.
(C) A means for wealthy nations to impose their will on poorer ones.
(D) A replacement for national environmental laws.

183. Which statement about the Human Development Index (HDI) is incorrect?
(A) It measures development based on health, education, and standard of living.
(B) A higher HDI score indicates a higher level of human development.
(C) It was developed to provide an alternative to per capita income as a sole measure of development.
(D) It exclusively measures environmental quality and political freedom.

184. The demographic dividend occurs when a country's age structure is characterized by a large proportion of:
(A) Children under 15.
(B) Elderly people over 65.
(C) Working-age population (15-64 years).
(D) Dependent population (children and elderly combined).

185. The views of Colin Clark and Ester Boserup are central to which perspective on population?
(A) Pessimistic
(B) Optimistic
(C) Neutralist
(D) Marxist

186. Which of the following is an example of a capital resource?
(A) A coal mine
(B) A factory building
(C) A skilled engineer
(D) A pristine river

187. The impact of population pressure on land use includes all of the following EXCEPT:
(A) Soil erosion
(B) Deforestation
(C) Reforestation
(D) Desertification

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188. A sustainable human eco-system is one where:
(A) Human needs are met without damaging the planet's life-support systems.
(B) Nature is preserved by completely excluding humans.
(C) Economic growth is pursued at any environmental cost.
(D) Only non-renewable resources are used.

189. Development policies in India that focus on population, development and environment reflect a commitment to:
(A) A Malthusian approach to population control.
(B) An integrated approach aligned with principles of sustainable development.
(C) A development model that ignores environmental externalities.
(D) A policy of promoting population growth for economic reasons.

190. Consider the following population perspectives.
1. The pessimistic perspective sees population growth as an obstacle to development.
2. The optimistic perspective sees population growth as conducive to development.
3. The neutralist perspective argues the link

Q. Sustainable Development Goals (SDGs)
R. Sustainable Development
S. Human Centered Development

List II: (Description)

1. A universal set of 17 goals for all countries to be achieved by 2030.
2. A development paradigm focused on human well-being over mere economic growth.
3. A set of 8 goals primarily for developing countries, set in 2000.
4. Development that meets present needs without compromising the ability of future generations to meet theirs.

Choose the correct option:
(A) P-1, Q-3, R-2, S-4
(B) P-3, Q-1, R-4, S-2
(C) P-3, Q-2, R-1, S-4
(D) P-2, Q-4, R-3, S-1

171. Which of the following is NOT an implication of population growth?
(A) Pressure on food supply and water.
(B) Impact on housing and employment.
(C) Enhancement of political stability.
(D) Effect on health and education.

172. The interrelationship between population growth, environment, and development is best characterized as:
(A) A simple, linear, cause-and-effect chain.
(B) A complex web of mutually acting factors.
(C) A relationship where development is always the independent variable.
(D) A system where population growth is always a negative factor.

173. The "tragedy of commons" is an argument often used to support the:
(A) Optimistic view of population growth.
(B) Pessimistic view of population growth.
(C) Neutralist view of population growth.
(D) Marxist view of population growth.

174. The concept of 'disguised unemployment' is most relevant in the context of:
(A) The high-tech service industry.
(B) A highly mechanized industrial sector.
(C) Subsistence agriculture with surplus family labor.
(D) A financial market during a boom period.

175. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R).
Assertion (A): The shift from MDGs to SDGs represents a significant expansion in the scope and ambition of the global development agenda.
Reason (R): The SDGs are universal, more comprehensive by integrating the three dimensions of sustainable development (economic, social, environmental), and include new areas like peace, justice, and strong institutions.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

176. Which of the following represents an investment in human capital?
(A) Building a new highway.
(B) Funding a vocational training program.
(C) Purchasing new factory machinery.
(D) Opening a new stock exchange.

177. A key feature of population ageing is:
(A) A decrease in the median age of the population.
(B) An increase in the proportion of the population over 60 or 65 years.
(C) A rise in the fertility rate.
(D) A fall in life expectancy.

178. From a pessimistic perspective, rapid population growth is seen as an obstacle to development because it:
(A) Stimulates technological innovation.
(B) Increases the dependency burden and reduces savings.
(C) Creates a larger market for goods and services.
(D) Leads to a more skilled workforce.

179. A forest from which timber is harvested at a rate that allows the forest to regrow and maintain its health is an example of the use of a:
(A) Non-renewable resource
(B) Depleted resource
(C) Renewable resource sustainably
(D) Capital resource

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(B) 3, 4, and 5 only
(C) 1, 2, 3, and 4 only
(D) 1, 2, 3, 4, and 5

141. The welfare approach to development focuses on:
(A) Market-led growth
(B) Provision of public goods and services
(C) Human capital investment for productivity
(D) Export-oriented industrialization

142. A key component of social capital is:
(A) Physical infrastructure
(B) Financial assets
(C) Trust and social networks
(D) Human knowledge and skills

143. What is the fundamental principle of sustainable development?
(A) Economic growth must be halted to protect the environment.
(B) Future generations should not have their prospects diminished by the current generation.
(C) Environmental protection is more important than social equity.
(D) The needs of the present generation are paramount.

144. The Malthusian "positive checks" on population growth refer to factors that:
(A) Increase the birth rate, such as early marriage.
(B) Decrease the birth rate, such as moral restraint.
(C) Promote agricultural innovation and increase the food supply.
(D) Increase the death rate, such as famine, disease, and war.

145. Match List I with List II regarding concepts/ideas and their proponents or associated studies.
List I: (Concept/Idea)
P. Population as the 'ultimate resource'
Q. Population pressure induces agricultural innovation
R. Population-poverty cycle via low savings
S. Tragedy of the Commons
List II: (Proponent/Study)
1. Coale and Hoover
2. Garrett Hardin
3. Julian Simon
4. Ester Boserup
Choose the correct option:
(A) P-3, Q-4, R-1, S-2
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-1, R-4, S-2
(D) P-4, Q-3, R-2, S-1

146. Fossil fuels like petroleum and natural gas are classified as:
(A) Renewable capital resources
(B) Non-renewable natural resources
(C) Renewable natural resources
(D) Human resources

147. A person who has just graduated from college and is actively looking for their first job is considered to be part of the:
(A) Labour force and unemployed
(B) Labour force and employed
(C) Not in the labour force
(D) Disguised unemployed

148. The effect of population growth on the structure of employment is often seen as a shift from:
(A) Service sector to agricultural sector.
(B) Industrial sector to agricultural sector.
(C) Agricultural sector to industrial and service sectors.
(D) Service sector to industrial sector.

149. The process where human activities lead to the degradation of soil quality through erosion, salinization, or nutrient loss is a direct pressure on which resource?
(A) Air
(B) Water
(C) Land
(D) Capital

150. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R).
Assertion (A): Population ageing presents significant challenges to the fiscal sustainability of a state.
Reason (R): An increasing proportion of elderly people leads to higher public expenditure on pensions and healthcare, while the proportion of the working-age population that contributes taxes may shrink.

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between population and development is complex.
4. Socialist views blame capitalism, not population, for poverty.
5. Malthus represents the optimistic viewpoint.
Which combination of the above statements is correct?
(A) 1, 2, and 3 only
(B) 3, 4, and 5 only
(C) 1, 2, 3, and 4 only
(D) 1, 2, 3, 4, and 5

191. The Physical Quality of Life Index (PQLI) is an unweighted average of which three indicators?
(A) Per capita income, literacy, life expectancy
(B) Infant mortality, literacy, life expectancy at age one
(C) GNI, sanitation, clean water access
(D) Gender equality, air quality, political freedom

192. The concept of "social capital" refers to:
(A) The amount of money a society invests in social services.
(B) The networks, norms, and trust that facilitate cooperation.
(C) The total value of a country's social infrastructure.
(D) The financial capital held by social enterprises.

193. The transition from the first to the second stage of the demographic transition model is initiated by:
(A) A rapid decline in the birth rate.
(B) A rapid decline in the death rate.
(C) A rapid increase in the birth rate.
(D) A rapid increase in both birth and death rates.

194. The Coale and Hoover study is a classic example of which perspective?
(A) Pro-natalist
(B) Optimistic
(C) Pessimistic
(D) Neutralist

195. Match List I with List II regarding unemployment types and their descriptions.
List I: (Unemployment Type)
P. Frictional
Q. Disguised
R. Seasonal
S. Chronic
List II: (Description)
1. Affects industries like agriculture and tourism; linked to the time of year.
2. Long-term unemployment due to deep-seated economic issues.
3. Temporary unemployment while individuals are "between jobs".
4. Marginal productivity of labor is zero or negative.
Choose the correct option:
(A) P-3, Q-4, R-1, S-2
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-1, R-4, S-2
(D) P-4, Q-3, R-2, S-1

196. An increase in greenhouse gases in the atmosphere is a major driver of:
(A) Ozone layer formation
(B) Global warming
(C) Water purification
(D) Soil formation

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197. Which of the following best describes the Marxist view on the 'population problem'?
(A) It is a natural law that population will outstrip resources.
(B) The 'population problem' is a symptom of the capitalist system of production.
(C) A large population is necessary for the proletarian revolution.
(D) Strict state-led population control is essential for a socialist society.

198. The 'economically active population' is a key concept in the study of which resource?
(A) Natural resources
(B) Capital resources
(C) Human resources
(D) Renewable resources

199. An adverse implication of population growth on housing is:
(A) A decrease in housing prices.
(B) An increase in the average size of dwellings.
(C) A surplus of available housing units.
(D) Increased demand leading to overcrowding and growth of slums.

government intervention in the economy.
(B) Development is primarily driven by private sector investment in heavy industries.
(C) Development is contingent on the state's active role in providing public services.
(D) Development relies on individuals securing their own health and education services.

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Beyond individual well-being, the discourse on development has expanded to encompass broader social dimensions. Social development is a process of planned social change designed to promote the welfare of the population in conjunction with a dynamic process of economic development. It involves strengthening civil society and empowering communities. A key concept within this domain is 'social capital', which refers to the networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit. High levels of social capital are considered conducive to social change, which is the alteration of social structures, cultural patterns, and societal institutions over time. To quantify these abstract concepts, indices have been developed. The Social Development Index (SDI) measures a country's social progress, while the Gender Development Index (GDI) specifically measures gender gaps in human development achievements by accounting for disparities between women and men in health, knowledge, and living standards. These social metrics gained global prominence through frameworks like the Millennium Development Goals (MDGs), which established a series of time-bound targets to address extreme poverty and its many dimensions, including education, gender equality, and health, thereby institutionalizing the importance of social progress in the global development agenda.

Based on the above source, attempt the following five questions.

256. According to the paragraph, what is the primary focus of 'social development'?
(A) Promoting economic growth without consideration for social welfare.
(B) Achieving planned social change to enhance population welfare alongside economic progress.
(C) Preserving traditional social structures against any form of alteration.
(D) Encouraging individual competition as the main driver of societal advancement.

257. The concept of 'social capital' is best described as:
(A) the financial assets held collectively by a community.
(B) the physical infrastructure that supports social gatherings.
(C) the level of formal education within a society.
(D) the networks, norms, and trust that enable cooperation.

258. What specific function does the Gender Development Index (GDI) perform?
(A) It assesses gender-based disparities in health, knowledge, and living standards.
(B) It ranks countries based on the number of women in political office.
(C) It measures overall social progress without disaggregating by gender.
(D) It exclusively measures the economic participation of women.

259. The passage suggests that the Millennium Development Goals (MDGs) played what role in the context of social development?
(A) They discouraged international cooperation on social issues.
(B) They focused solely on economic targets, ignoring social dimensions.
(C) They provided a global framework that institutionalized targets for social progress.
(D) They were a theoretical concept with no practical implementation.

260. It can be inferred from the text that a society with low social capital would likely experience:
(A) difficulties in facilitating cooperation for mutual benefit.
(B) a high degree of spontaneous and effective community action.
(C) rapid and positive social change driven by consensus.
(D) strong trust between citizens and public institutions.

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(A) The unimportance of economic growth.
(B) The limits to growth and the need for ecological balance.
(C) The need to prioritize industrialization over all else.
(D) The separation of environmental concerns from development planning.

210. Which index is designed to measure gender inequality in empowerment, education, and the labor market?
(A) Human Development Index (HDI)
(B) Physical Quality of Life Index (PQLI)
(C) Gender Inequality Index (GII)
(D) Social Development Index (SDI)

211. The core argument of Ester Boserup in "The Conditions of Agricultural Growth" is that:
(A) Population growth leads to agricultural collapse.
(B) Agricultural systems are static and do not respond to population changes.
(C) Population pressure is a major cause of agricultural innovation and intensification.
(D) The best agricultural systems are those with the lowest population density.

212. What is a primary factor affecting the demand for labour?
(A) The rate of population growth.
(B) The overall level of economic activity and production.
(C) The retirement age set by the government.
(D) The national birth rate.

213. The pressure of population growth leading to the expansion of cities into surrounding countryside is known as:
(A) Urban densification
(B) Urban sprawl
(C) Rural gentrification
(D) Counter-urbanization

214. The Neutralist/revisionist perspective, associated with Simon Kuznets, suggests that:
(A) Population growth is always good for development.
(B) Population growth is always bad for development.
(C) There is no single relationship between population and development.
(D) Population is the only factor that determines a country's development path.

215. Consider the following statements about environmental degradation.
1. Air pollution is caused by the release of harmful substances into the atmosphere.
2. The greenhouse effect is a natural phenomenon, but it is enhanced by human emissions.
3. Deforestation contributes to both soil erosion and loss of biodiversity.
4. Soil salinity can be caused by natural processes but is often exacerbated by human irrigation.
5. Desertification is the process of fertile land turning into desert.

Which combination of the above statement(s) is/are correct?
(A) 1, 2, and 3 only
(B) 1, 3, 4, and 5 only
(C) 2, 3, and 5 only
(D) 1, 2, 3, 4, and 5

216. Which of the following is NOT one of the three dimensions of the Human Development Index (HDI)?
(A) A long and healthy life
(B) Knowledge
(C) Environmental quality
(D) A decent standard of living

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217. The period of economic growth enabled by a favorable population age structure is called the:
(A) Demographic transition
(B) Demographic dividend
(C) Ageing society
(D) Population explosion

218. The Mercantilist school of thought viewed a large and growing population as:
(A) An asset for military and economic power.
(B) A drain on national resources.
(C) A cause of social instability.
(D) Irrelevant to state policy.

219. Which of the following represents a non-renewable natural resource?
(A) Solar radiation
(B) Wind
(C) Natural gas

200. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R).
Assertion (A): The optimistic school of thought, represented by Julian Simon, views population growth as a long-run stimulus to economic development.
Reason (R): More people mean more minds to discover, invent, and solve problems, leading to technological advancement and resource creation.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

201. Which statement accurately describes a key principle of the 'welfare approach' to development?
(A) It relies on market forces to distribute social goods.
(B) It prioritizes direct government intervention to provide basic needs.
(C) It sees welfare spending as an unproductive drain on the economy.
(D) It focuses on increasing individual wealth through tax cuts.

202. The concept of 'social change' refers to long-term transformations in a society's:
(A) Weather patterns
(B) Geological formations
(C) Institutions, norms, and behaviors
(D) Daily political news cycle

203. A key goal of the Sustainable Development Goals (SDGs) that was not explicitly an MDG is:
(A) Eradicating poverty
(B) Achieving primary education
(C) Promoting gender equality
(D) Taking urgent action to combat climate change

204. Which of the following is a classic argument from the 'pessimistic perspective' on population and development?
(A) Population growth expands markets and creates economies of scale.
(B) Population growth dilutes the stock of capital per worker, hampering productivity.
(C) Population growth is a neutral factor, with its effects depending on policy.
(D) Population pressure stimulates agricultural innovation.

205. Consider the following statements about capital and human resources.
1. Capital resources are man-made aids to production, like machinery.
2. Demographic factors like age structure can affect a country's savings and investment rates.
3. Technology plays a vital role in improving the productivity of physical assets.
4. The 'labour force' includes both employed and unemployed individuals seeking work.
Which of the above statements are correct?
(A) 1 and 4 only
(B) 2 and 3 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

206. A ski instructor who is unemployed during the summer months is experiencing:
(A) Frictional unemployment
(B) Disguised unemployment
(C) Chronic unemployment
(D) Seasonal unemployment

207. The excessive removal of trees from a forest area is known as:
(A) Afforestation
(B) Reforestation
(C) Deforestation
(D) Desertification

208. The idea of a 'sustainable human eco-system' implies a balance between:
(A) Human consumption and environmental regeneration processes.
(B) Urban and rural populations across various regional territories.
(C) Economic growth and political stability within national boundaries.
(D) National and international policies regarding economic expansion.

209. The inclusion of environmental sustainability in India's developmental plans shows an acknowledgement of:

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230. Consider the following statements about the optimist perspective on population.
1. It posits that population growth can be conducive to development.
2. Colin Clark argued that population density could lead to economic advantages.
3. Ester Boserup linked population pressure to agricultural innovation.
4. Julian Simon viewed human ingenuity as the ultimate problem-solving resource.

Which of the above statements are correct?
(A) 1 and 3 only
(B) 2 and 4 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

231. The term 'human eco-system' emphasizes:
(A) The complete separation of humans from nature.
(B) The interactions between human social systems and their context.
(C) Ecosystems that are entirely artificial and man-made.
(D) The superiority of humans over all other species.

232. An international protocol is best described as:
(A) A domestic policy of a single country.
(B) A scientific research paper.
(C) An international agreement or treaty on a specific issue.
(D) A philosophical viewpoint on global affairs.

233. The concept of 'resource scarcity' is relative because it depends on:
(A) The absolute physical quantity of the resource on Earth.
(B) Both the supply of the resource and the human demand.
(C) Only the technology available to extract the resource.
(D) Only the price of the resource on the global market.

234. Which of these is a direct implication of population growth for a country's energy sector?
(A) A decrease in energy demand.
(B) An increase in the per capita availability of energy.
(C) A greater overall demand for energy resources.
(D) A spontaneous reduction in energy-related pollution.

235. A government policy focused on adult literacy programs and public health campaigns is an example of:
(A) Investment in physical capital.
(B) Investment in human capital.
(C) A pessimistic population policy.
(D) A Mercantilist strategy.

236. The Malthusian trap describes a situation where:
(A) Population growth leads to sustained economic prosperity.
(B) Technological progress permanently outpaces population growth.
(C) Population gains absorb food supply, preventing living standards rise.
(D) A declining population leads to economic stagnation.

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237. The removal of topsoil by wind or water, often accelerated by human activities like deforestation, is called:
(A) Soil salinity
(B) Soil erosion
(C) Land reclamation
(D) Alluviation

238. 'Sustainable human eco-systems' are those in which:
(A) Human activities integrate with ecological processes safely.
(B) Economic growth is maximized regardless of environmental cost.
(C) Human populations are isolated from the natural world.
(D) All natural resources are left completely unutilized.

239. The factor that distinguishes 'frictional unemployment' from other types is that it is:
(A) Long-term and structural.
(B) Caused by a lack of demand in the economy.
(C) Part of the natural process of job turnover in a dynamic economy.
(D) Prevalent only in the agricultural sector.

240. Consider the following statements about sustainable development and related goals.
1. The concept of sustainable development

balances economic, social, and environmental needs.
2. It prioritizes the needs of the present generation over future generations.
3. The SDGs are a set of universal goals that replaced the MDGs.
4. The MDGs were primarily focused on poverty reduction in developing countries.
5. Ensuring environmental sustainability was a goal in both the MDGs and SDGs.

Which combination of the above statements is correct?
(A) 1, 2, and 3 only
(B) 1, 3, 4, and 5 only
(C) 2, 3, and 4 only
(D) 1, 2, 4, and 5 only

241. The shift from a high birth/high death rate regime to a low birth/low death rate regime is known as the:
(A) Age structure transition
(B) Economic transition
(C) Demographic transition
(D) Epidemiological transition

242. Socialist and Marxist views attribute social problems like poverty primarily to:
(A) Overpopulation
(B) Resource scarcity
(C) The mode of production and class structure
(D) Lack of technological progress

243. The effect of population growth on the structure of employment is typically a long-term shift towards:
(A) The primary sector (agriculture).
(B) The secondary (industry) and tertiary (services) sectors.
(C) The informal sector exclusively.
(D) A decrease in overall employment.

244. A direct consequence of increased pressure on land use from population growth is:
(A) Reforestation
(B) Deforestation
(C) A decrease in soil erosion
(D) An increase in soil fertility

245. Consider the following development concepts and indices.
1. Physical Quality of Life Index (PQLI)
2. Human Development Index (HDI)
3. Millennium Development Goals (MDGs)
4. Sustainable Development Goals (SDGs)

Which of the following represents the correct chronological sequence of their widespread introduction or popularization?
(A) 2, 1, 3, 4
(B) 1, 2, 3, 4
(C) 1, 3, 2, 4
(D) 2, 3, 1, 4

246. What does the term "human perception and adjustment to imbalance" imply?
(A) That environmental problems are only a matter of perception, not reality.
(B) That humans are incapable of responding to environmental crises.
(C) That societies can recognize threats and develop adaptive strategies.
(D) That ecological balance is a static, unchanging state.

247. A core idea of the 'neutralist/revisionist' perspective is that the impact of population growth:
(A) Is always negative.
(B) Is always positive.
(C) Is mediated by factors like technology, institutions, and policies.
(D) Is non-existent.

248. The expansion of housing, sanitation, and education systems are all necessary responses to the implications of:
(A) Population decline.
(B) Population ageing.
(C) Population growth.
(D) A static population.

249. Which of the following is NOT a type of unemployment?
(A) Frictional
(B) Cyclical
(C) Disguised
(D) Chronic

250. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R).
Assertion (A): Population ageing presents significant challenges to the fiscal sustainability

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of a state.

Reason (R): An increasing proportion of elderly people leads to higher public expenditure on pensions and healthcare, while the proportion of the working-age population that contributes taxes may shrink.

(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

Direction : Please read the following source carefully.

The traditional approach to measuring development has long been centered on economic metrics, with per capita income being the most prominent indicator. However, this metric faces significant limitations as it fails to capture the multi-dimensional nature of human well-being. Per capita income, being an average, can mask vast inequalities in wealth distribution and provides no information on the quality of life, access to essential services like education and healthcare, or levels of personal freedom. In response to these shortcomings, human-centered development paradigms have emerged, shifting the focus from mere economic growth to enhancing human capabilities. The welfare approach, for instance, emphasizes the provision of public services, while the 'investment in human capital' approach views expenditure on education and health not as consumption, but as a critical investment for future productivity and economic progress. These conceptual shifts are operationalized through composite indices like the Human Development Index (HDI), which combines indicators of life expectancy, education, and income, and the Physical Quality of Life Index (PQLI), which focuses on life expectancy, infant mortality, and literacy. These indices provide a more holistic and nuanced assessment of development, acknowledging that a nation's progress is ultimately about its people's lives and freedoms.

Based on the above source, attempt the following five questions.

251. What is identified as the primary limitation of using per capita income as a sole indicator of development?
(A) Its inability to measure a nation's industrial output accurately.
(B) Its failure to account for the multi-dimensional aspects of human well-being.
(C) Its difficulty in being calculated for developing nations.
(D) Its overemphasis on environmental sustainability.

252. The 'investment in human capital' approach re-conceptualizes expenditure on health and education as:
(A) a fundamental investment for enhancing future productivity.
(B) a form of social consumption with limited economic returns.
(C) a necessary but unproductive drain on national resources.
(D) a primary responsibility of non-governmental organizations.

253. How do indices like the HDI and PQLI represent a shift in the concept of development?
(A) By prioritizing military strength over economic stability.
(B) By focusing exclusively on environmental protection measures.
(C) By moving from a purely economic metric to a more holistic, human-centered assessment.
(D) By reverting to traditional measures of national wealth and resource accumulation.

254. Based on the text, it can be inferred that a country with a high per capita income could still have a low HDI if:
(A) it has a very high rate of industrial growth.
(B) it invests heavily in technological infrastructure.
(C) its population is small and highly concentrated in urban areas.
(D) it has significant inequality and poor outcomes in health and education.

255. Which of the following statements best aligns with the welfare approach to development mentioned in the paragraph?
(A) Development is best achieved by minimizing

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(D) Geothermal heat

220. Match List I with List II regarding indices and their component indicators.
List I: (Index)
P. HDI
Q. PQLI
R. HPI
S. GDI
List II: (Components)
1. Measures deprivation in longevity, knowledge, and living standards.
2. Adjusts HDI achievements for gender inequality.
3. Comprises life expectancy, education, and GNI per capita.
4. Comprises infant mortality, life expectancy at age 1, and literacy.

Choose the correct option:
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-4, R-1, S-2
(C) P-3, Q-1, R-4, S-2
(D) P-4, Q-3, R-2, S-1

221. A primary factor affecting the supply of labour is:
(A) The number of factories in a country.
(B) The population's size and age structure.
(C) The demand for exports.
(D) The level of corporate profits.

222. An imbalance caused by human factors in an ecosystem could be:
(A) A landslide caused by an earthquake.
(B) A flood caused by a hurricane.
(C) Eutrophication of a lake due to fertilizer runoff.
(D) A wildfire started by a lightning strike.

223. The 'Limits to Growth' study is a prime example of which viewpoint?
(A) The optimistic perspective
(B) The pessimistic perspective
(C) The neutralist perspective
(D) The pro-natalist perspective

224. 'Chronic unemployment' refers to unemployment that is:
(A) Short-term and voluntary.
(B) Tied to a specific season of the year.
(C) Long-term and persistent.
(D) A result of people being overqualified for their jobs.

225. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R).
Assertion (A): The relationship between population, development, and environment is a two-way street.
Reason (R): Development affects population dynamics (e.g., fertility, mortality) and environmental quality, while population size and growth, as well as the state of the environment, can constrain or enable development.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

226. The Social Development Index (SDI) would likely include measures of:
(A) Stock market performance
(B) Inter-personal safety and civic activation
(C) Foreign currency reserves
(D) National military expenditure

227. In the demographic transition, which rate begins to fall first?
(A) Death rate
(B) Birth rate
(C) Migration rate
(D) Literacy rate

228. Which thinker is most associated with the idea of population as the "ultimate resource"?
(A) Thomas Malthus
(B) Paul Ehrlich
(C) Julian Simon
(D) Garrett Hardin

229. The main difference between the 'welfare approach' and the 'investment in human capital' approach is that the latter emphasizes:
(A) Direct provision of goods as a right.
(B) The economic returns of spending on health and education.
(C) Minimizing all forms of social spending.
(D) The role of charity and non-governmental organizations.

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The growing awareness of the environmental consequences of conventional development models led to the emergence of the concept of sustainable development. This paradigm seeks to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. It is fundamentally an integrative concept, insisting that development must balance social, economic, and environmental objectives. It represents a departure from the growth-at-all-costs mentality, advocating for a development pathway that respects ecological limits. The principles of sustainable development were translated into a concrete global action plan with the adoption of the Sustainable Development Goals (SDGs). The SDGs replaced the Millennium Development Goals (MDGs) and set forth a more comprehensive and universal agenda. Unlike the MDGs, which were primarily aimed at developing countries, the SDGs are applicable to all countries, rich and poor. They consist of a broad set of interconnected goals covering issues such as poverty, hunger, health, education, gender equality, clean water, affordable and clean energy, and climate action. The universal and integrated nature of the SDGs underscores the understanding that environmental degradation, social inequality, and economic prosperity are intrinsically linked and must be addressed in a holistic manner for genuine, lasting development to be achieved.

Based on the above source, attempt the following five questions.

261. What is the core principle of sustainable development as described in the passage?
(A) Maximizing economic growth in the present, regardless of future impact.
(B) Prioritizing environmental conservation over any social or economic needs.
(C) Achieving rapid industrialization by exploiting natural resources.
(D) Meeting present needs without jeopardizing the ability of future generations to meet theirs.

262. How do the Sustainable Development Goals (SDGs) differ from the Millennium Development Goals (MDGs) according to the text?
(A) The SDGs are less comprehensive and focus only on environmental issues.
(B) The SDGs are universally applicable to all countries, whereas the MDGs targeted developing nations.
(C) The SDGs completely ignore the economic dimensions of development.
(D) The MDGs were more successful in achieving all their stated targets.

263. The passage implies that the concept of sustainable development challenges which of the following?
(A) The idea that social, economic, and environmental issues are interconnected.
(B) The need for international cooperation in addressing global problems.
(C) The pursuit of development that prioritizes economic growth above all else.
(D) The goal of meeting the basic needs of the current generation.

264. Which of the following best reflects the integrated nature of the SDGs?
(A) Each goal is designed to be pursued in isolation from the others.
(B) The goals focus on a single dimension, such as economic growth or environmental protection.
(C) The goals are designed to be implemented by a single global authority.
(D) The goals address a wide array of interlinked issues like poverty, health, and climate change.

265. The emphasis on "respecting ecological limits" within the sustainable development paradigm suggests that:
(A) economic activities should be conducted within the regenerative capacity of the environment.
(B) human needs must always be subordinated to nature.
(C) technology can solve all problems of resource depletion.
(D) environmental concerns are only relevant for future generations.

Direction : Please read the following source carefully.

The measurement and conceptualization of poverty have evolved significantly, moving beyond simplistic income-based definitions.

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While income poverty remains a critical concern, it is now widely recognized that poverty is a multidimensional phenomenon encompassing various forms of deprivation. This broader understanding has led to the development of more sophisticated measures. One such measure is the Human Poverty Index (HPI), which was designed to provide a composite index of deprivation in a community. Unlike measures that focus on average national achievement, the HPI concentrates on the distribution of progress and measures the backlog of deprivations that still exist. It consolidates different dimensions of poverty, typically focusing on three key areas: a long and healthy life (measured by the probability at birth of not surviving to a certain age), knowledge (measured by the adult illiteracy rate), and a decent standard of living (a composite of factors like access to safe water and the percentage of underweight children). By focusing on deprivation rather than income, the HPI offers a distinct perspective on poverty, highlighting the lack of basic human capabilities and providing a more nuanced tool for policy-making aimed at poverty eradication. It underscores that being poor is not just about a lack of money, but a lack of fundamental opportunities.

Based on the above source, attempt the following five questions.

266. What is the central argument for moving beyond income-based definitions of poverty?
(A) Income is too difficult to measure accurately across different countries.
(B) Poverty is a multidimensional phenomenon involving various deprivations.
(C) Income-based poverty has already been eradicated globally.
(D) High income always guarantees a high quality of life.

267. What distinguishes the Human Poverty Index (HPI) from many other development indices?
(A) It focuses on the average level of national wealth and income.
(B) It concentrates specifically on deprivations rather than average achievements.
(C) It measures only the economic growth rate of a country.
(D) It is exclusively concerned with environmental degradation.

NODIA

268. According to the passage, which of the following dimensions is typically included in the HPI calculation?
(A) The deprivation in knowledge, measured by illiteracy.
(B) The level of political freedom and participation.
(C) The rate of industrial and technological innovation.
(D) The gross domestic product per capita.

269. The passage suggests that the main purpose of the HPI is to:
(A) identify the wealthiest individuals within a nation for taxation purposes.
(B) rank countries based on their military strength and geopolitical influence.
(C) provide a more nuanced understanding of poverty based on capability deprivation.
(D) measure the total financial assets of a nation's population.

270. It can be inferred from the text that a country could have a relatively low level of income poverty but a high HPI if:
(A) its wealth is evenly distributed and public services are excellent.
(B) its economy is growing rapidly through technological exports.
(C) it has a very high average income but low population density.
(D) there are significant portions of the population with low life expectancy and literacy.

Direction : Please read the following source carefully.

The process of development has a profound and predictable effect on a country's population dynamics, often described through the model of demographic transition. This transition involves a shift from a state of high birth and death rates to one of low birth and death rates. As development progresses, improvements in healthcare, sanitation, and nutrition lead to a fall in mortality rates, which is typically followed, after a lag, by a decline in fertility rates. This sequence directly alters the country's population pyramid, initiating an age structure transition. In the initial phase, falling mortality among the young leads to a youth bulge. As fertility subsequently declines,

the proportion of the working-age population (typically 15-64 years) grows relative to the dependent population (children and the elderly). This period offers a window of opportunity known as the demographic dividend, where a larger labor force can fuel accelerated economic growth, provided there are adequate investments in education and job creation. However, as the transition concludes with low fertility and longer life expectancy, the population pyramid becomes more rectangular or even inverted, leading to the phenomenon of population ageing. This final stage presents new challenges, such as pressure on pension systems and healthcare services for the elderly.

Based on the above source, attempt the following five questions.

271. According to the model of demographic transition, what is the typical sequence of events?
(A) Birth rates decline first, followed by a decline in death rates.
(B) Birth and death rates decline simultaneously at the same pace.
(C) Death rates decline first, followed by a decline in birth rates.
(D) Birth and death rates rise first, followed by a sharp decline.

272. The 'demographic dividend' refers to a period when:
(A) the proportion of the elderly population is at its peak.
(B) the working-age population is proportionally large, offering potential for economic growth.
(C) there is a high dependency ratio due to a large number of children.
(D) economic growth is hindered by a shrinking workforce.

273. What is described as the primary trigger for the initial stage of demographic transition?
(A) A government policy enforcing a two-child norm.
(B) A cultural shift towards smaller family sizes.
(C) A massive wave of out-migration of the young population.
(D) Improvements in healthcare, sanitation, and nutrition leading to lower mortality.

274. The passage suggests that population ageing is a consequence of:
(A) low fertility rates combined with longer life expectancy.
(B) high fertility rates and high mortality rates.
(C) an unsuccessful demographic transition.
(D) the failure to capitalize on the demographic dividend.

275. It can be inferred that for a country to successfully harness its demographic dividend, it must:
(A) encourage higher fertility rates to expand the population base.
(B) focus exclusively on supporting its elderly population.
(C) invest in human capital and create sufficient employment opportunities.
(D) restrict access to healthcare to slow the decline in mortality.

Direction : Please read the following source carefully.

The relationship between population size and development has been a subject of debate for centuries, with various philosophical and religious traditions offering distinct perspectives. Many historical views can be characterized as pro-natalist, often linking a large and growing population to prosperity and national strength. Ancient Greek philosophers, for instance, discussed ideal population sizes for city-states to ensure defense and social cohesion. The Chinese philosopher Confucius's writings are interpreted to suggest a concern for an optimum population, where the population size is balanced with available land and resources to maintain social order and well-being. During the early modern period, European Mercantilist thought explicitly favored large populations as a means to increase the nation's wealth, labor supply, and military power. Similarly, the Physiocrats, while emphasizing agriculture as the source of wealth, also saw a robust population as essential for cultivating the land and generating surplus. In a different vein, Socialist and Marxist views tended to critique the distribution of resources under capitalism rather than population size itself. They argued that problems like poverty and unemployment were not caused by overpopulation but by the inequitable social and economic structures of a capitalist system, suggesting that

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299. The passage suggests that the process of development typically leads to what change in the structure of employment?
(A) A shift of labor from the services sector to the agricultural sector.
(B) A shift of labor from agriculture to the industry and services sectors.
(C) A concentration of all labor within the industrial sector.
(D) A permanent increase in seasonal unemployment across all sectors.

300. A ski resort that lays off most of its staff during the summer months is an example of an enterprise contributing to:
(A) seasonal unemployment.
(B) frictional unemployment.
(C) chronic unemployment.
(D) disguised unemployment.

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(B) Population growth stimulates technological innovation in agriculture.
(C) Population and food supply grow at equal rates, ensuring stability.
(D) Food supply increases geometrically while population increases arithmetically.

282. The Coale and Hoover study contributed to the pessimistic perspective by arguing that rapid population growth:
(A) increases the rate of productive investment in a country.
(B) diverts resources away from productive investments and towards social overhead.
(C) has no significant impact on per capita income growth.
(D) is a necessary precondition for economic development.

283. The "Tragedy of the Commons" is used to illustrate a problem that is intensified by population growth. What is this problem?
(A) The equitable distribution of private property.
(B) The depletion of unregulated common resources through individual self-interest.
(C) The underutilization of shared natural resources.
(D) The failure of governments to regulate private enterprise.

284. How did Enke's investment model provide an economic argument for population control?
(A) By calculating the cost of an additional birth and framing family planning as a productive investment.
(B) By demonstrating that a larger population always leads to a larger market.
(C) By proving that traditional development projects were always ineffective.
(D) By suggesting that population growth has no economic cost.

285. A common theme across the pessimistic perspectives mentioned (Malthus, Coale and Hoover, Limits to Growth) is the concern about:
(A) the benefits of a large labor force for industrialization.
(B) the moral decline associated with smaller family sizes.
(C) the negative consequences of unchecked exponential population growth.
(D) the inability of humans to innovate in the face of challenges.

Direction : Please read the following source carefully.

In direct contrast to pessimistic views, the optimistic perspective argues that population growth can be conducive to, or even a driver of, development. This line of thought has historical roots in Mercantilist views, which saw a large population as a source of national power and wealth. More modern proponents have developed sophisticated arguments to support this position. For example, Colin Clark argued that population growth acts as a necessary spur for agricultural innovation and intensification, forcing societies to move from inefficient, extensive farming methods to more productive, intensive ones. Ester Boserup famously elaborated on this, positing that population pressure is the primary catalyst for technological change in agriculture. In her view, necessity is the mother of invention, and a growing population creates the necessity that drives societies to innovate their farming techniques, leading to increased output. The economist Julian Simon was a particularly strong advocate of this view, arguing that humans are the 'ultimate resource'. He contended that more people lead to more problem-solvers, innovators, and entrepreneurs, resulting in accelerated technological progress and economic growth that more than compensates for the costs of a larger population. These optimistic views, shared in part by thinkers like Colin and Condorcet, see human ingenuity as a resource that expands, rather than depletes, with population growth.

Based on the above source, attempt the following five questions.

286. According to the optimistic perspective described, what is the primary role of population growth?
(A) It is a major obstacle to technological progress.
(B) It has a neutral and insignificant effect on development.
(C) It inevitably leads to the depletion of all natural resources.
(D) It is a catalyst for innovation and economic development.

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8. (A) Both Statement I and Statement II are true.
Global development frameworks have evolved from specific targets to universal goals. The Millennium Development Goals were established in 2000 to address urgent challenges primarily in developing nations. In contrast, the Sustainable Development Goals adopted in 2015 are universal, applying to all countries regardless of their income level. These later goals integrate economic, social, and environmental dimensions to ensure a comprehensive approach to global progress and sustainability.

9. (C) Meets present needs without compromising the ability of future generations.
Sustainable development is a holistic approach to growth that aims to balance economic progress with environmental protection and social equity. It emphasizes the principle of inter-generational justice, ensuring that the current generation utilizes resources responsibly. By avoiding the depletion of natural assets and minimizing ecological damage, this framework seeks to guarantee that future populations will have the necessary resources to meet their own developmental needs.

10. (A) Both A and R are true and R is the correct explanation of A.
The Human Poverty Index was introduced to provide a broader perspective on poverty beyond simple income levels. It measures deprivation by looking at the same dimensions used in the Human Development Index, which are longevity, knowledge, and a decent standard of living. By focusing on what people lack in these areas, rather than just how much money they earn, it offers a more nuanced understanding.

11. (D) Age structure transition.
The phenomenon known as age structure transition occurs when improvements in healthcare and nutrition significantly alter the demographic profile of a nation. As mortality rates decline and life expectancy increases, the distribution of different age groups within the population shifts over time. This process is a fundamental result of social and economic development, eventually leading to a higher proportion of working-age individuals and older adults.

12. (B) The transition invariably occurs at the same pace and in the same manner in all countries.
The demographic transition model provides a generalized framework for understanding how populations change from high birth and death rates to lower ones. While many countries follow this broad pattern, the specific pace, duration, and socio-economic drivers vary significantly between different regions and nations. Factors such as government policy, cultural norms, and the rate of industrialization mean that no two countries experience the demographic transition exactly.

13. (C) A shift in age structure towards a larger share of working-age people.
A demographic dividend refers to the economic growth potential that arises when a country's working-age population grows larger than the non-working dependent population. This shift occurs during the demographic transition as birth rates decline, reducing the proportion of young dependents. If supported by proper investments in health and education, this favorable age structure can boost national savings, increase productivity, and accelerate overall development.

14. (D) An increase in the youth dependency ratio.
Population ageing is a demographic shift characterized by an increasing median age and a rising proportion of elderly individuals within the total population. This process typically occurs due to declining fertility rates and rising life expectancy. While it places significant pressure on social security and healthcare systems for the elderly, it is actually associated with a declining youth dependency ratio, as fewer children are born.

NODIA

15. (D) 1, 2, 3, and 4
Historical perspectives on population have varied across cultures and eras. Greek philosophers often prioritized stability in city-states through population control, while Confucius emphasized balancing people with land resources. Later, Mercantilists advocated for large populations to increase national military and economic power. Physiocrats, focusing on agriculture as the source of wealth, also recognized how population size influences agricultural surplus. These diverse views reflect the evolving understanding.

293. The work of Simon Kuznets is cited in support of the neutralist perspective because his research found:
(A) strong evidence that population growth always hinders development.
(B) strong evidence that population growth always promotes development.
(C) that population growth was the single most important factor in economic growth.
(D) little empirical evidence for a strong, universal relationship in either direction.

294. How does the revisionist perspective view the "demographic dividend"?
(A) As an automatic economic boom that occurs whenever the youth population grows.
(B) As a potential benefit that can only be realized through appropriate policies.
(C) As a guaranteed negative outcome of population change.
(D) As a myth with no basis in demographic reality.

295. The neutralist/revisionist school of thought would most likely advise a policymaker to:
(A) focus solely on reducing population growth as the top priority.
(B) focus solely on increasing population growth to spur innovation.
(C) analyze how population changes interact with specific national policies and institutions.
(D) ignore population trends and focus only on economic indicators.

Direction : Please read the following source carefully.

The study of human resources involves analyzing the quantitative aspects of a population in relation to economic activity. Key concepts include the 'labour force' and the 'economically active population', which generally refer to individuals of working age who are either employed or actively seeking employment. A critical issue in this context is unemployment, which occurs when individuals in the labour force cannot find jobs. Unemployment can manifest in several distinct types, each with different causes and implications. 'Disguised unemployment', often found in agrarian economies, exists when more people are employed in a task than are actually needed, such that their marginal productivity is zero or close to zero. 'Seasonal unemployment' is linked to industries that have periodic cycles of activity, such as agriculture or tourism, leading to joblessness during the off-season. 'Frictional unemployment' is considered a temporary and natural part of a dynamic economy, occurring when workers are in the process of moving between jobs. Finally, 'chronic unemployment' refers to long-term joblessness, often resulting from structural issues within the economy, such as a mismatch between the skills of the workforce and the skills demanded by employers. The structure of employment itself is heavily influenced by both population growth and the process of development, which typically shifts labor from the primary (agriculture) sector to the secondary (industry) and tertiary (services) sectors.

Based on the above source, attempt the following five questions.

296. Which type of unemployment is characterized by workers being in a transitional period between jobs?
(A) Disguised unemployment
(B) Seasonal unemployment
(C) Chronic unemployment
(D) Frictional unemployment

297. 'Disguised unemployment' is described as a situation where:
(A) more workers are engaged in a task than is necessary, with near-zero marginal productivity.
(B) workers are actively seeking jobs but cannot find any.
(C) workers are unemployed due to the cyclical nature of their industry.
(D) workers lack the skills required for available long-term jobs.

298. According to the passage, the 'labour force' or 'economically active population' includes:
(A) only those individuals who are currently employed full-time.
(B) both employed individuals and those who are unemployed but actively seeking work.
(C) the entire population of a country, including children and retirees.
(D) only those individuals working in the industrial sector.

NODIA

24. (A) Neutralist/revisionist
Thinkers like Simon Kuznets and Allan Kelly are closely associated with the neutralist or revisionist school of thought. They emphasized that empirical evidence does not consistently support a simple negative or positive correlation between population growth and economic development. Instead, they focused on how other variables, such as technological change and institutional quality, mediate the impact of demographic shifts, making the overall relationship highly.

25. (D) 1, 2, 3, 4, and 5
The optimistic perspective on population growth encompasses several supportive arguments from different thinkers and eras. Mercantilists valued large populations for national power, while Colin Clark saw density as a stimulus for progress. Ester Boserup highlighted agricultural innovation, and Julian Simon emphasized the power of human intellect as the ultimate resource. Condorcet also believed in human ingenuity. Collectively, these views suggest that population growth can drive technological and social advancement.

26. (A) Renewable resources
Solar and wind energy are classified as renewable resources because they are naturally replenished on a human timescale. Unlike fossil fuels, these energy sources are virtually inexhaustible as long as the sun shines and the atmosphere moves. Utilizing these resources is a key component of sustainable development, as they provide energy without depleting finite stocks or causing the same level of environmental damage as non-renewable alternatives.

27. (D) Consuming non-renewable resources faster than they are replaced.
Resource depletion occurs when the rate of consumption for a specific natural resource exceeds its rate of replenishment. This concept is most critically applied to non-renewable resources like minerals and fossil fuels, which have a finite supply and take millions of years to form. When human societies use these materials faster than geological processes can replace them, the total available stock diminishes, leading to scarcity.

28. (B) Coal
Non-renewable natural resources are substances found within the earth that exist in fixed, finite quantities. These materials, such as coal and other fossil fuels, take millions of years to form through geological processes and cannot be replaced once they are consumed. Their extraction and use lead to eventual depletion, making sustainable management and the search for renewable energy alternatives critical for long-term global development.

29. (C) Diverting funds from investment towards young population consumption.
A high youth dependency ratio occurs when a large proportion of the population consists of children who are not yet economically productive. This demographic structure places a significant strain on capital resources because a substantial portion of national income must be spent on immediate consumption, health, and education for the young. This diversion of funds reduces the amount of capital available for savings and long-term.

30. (A) P-3, Q-1, R-2, S-4
Different intellectual traditions offer varying interpretations of the relationship between population and progress. Thomas Malthus famously represented the pessimistic view, while Julian Simon championed the optimistic perspective. Simon Kuznets adopted a more neutral or revisionist stance, focusing on contextual complexity. Finally, the Mercantilists were historically pro-natalist, believing that a large and growing population was essential for increasing the military and economic power.

31. (A) Both the employed and the unemployed who are available for work.
The economically active population, also known as the labor force, comprises all individuals who supply labor for the production of goods and services. This includes both persons who are currently employed and those who are unemployed but are actively seeking work and are available to start. It excludes individuals who are not looking for work, such as full-time students, retirees, or those performing unpaid domestic duties.

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ANSWERS

1. (B) Understanding the complex interactions and feedback loops between these three elements.
The study of the interrelationship between population, environment, and development focuses on identifying how demographic shifts, ecological changes, and economic growth patterns influence each other. It seeks to understand the dynamic feedback loops where human numbers impact resource availability, while environmental health simultaneously determines developmental success. This holistic approach moves beyond linear causality to explore the multi-dimensional synergy and reciprocal dependencies existing between these three sectors.

2. (A) The distribution of income and quality of life.
Per capita income provides a simple average of a nation's total economic output divided by its total population size. However, this metric is limited because it fails to capture how that income is actually distributed across different social segments. It ignores disparities in wealth, access to essential services, and general quality of life. Consequently, a high average income can coexist with significant poverty and social inequality.

3. (C) It views education and health as investments that enhance productivity and growth.
The investment in human capital approach prioritizes expenditures on essential social services like education and healthcare as strategic investments. These services are viewed as fundamental drivers that enhance the skills, knowledge, and physical well-being of the workforce. By improving individual capabilities, societies can achieve higher levels of labor productivity and long-term economic growth. This paradigm shifts the focus from purely physical infrastructure toward developing human potential.

4. (D) A long and healthy life, knowledge, and a decent standard of living.
The Human Development Index is a composite statistic utilized to rank countries based on a broader definition of progress. It integrates three essential dimensions of human well-being: health, knowledge, and standard of living. These are measured through specific indicators such as life expectancy at birth, average years of schooling, and gross national income per capita. This multi-dimensional framework provides a more comprehensive assessment than economic growth alone.

5. (A) P-4, Q-2, R-3, S-1
Development indices are designed to measure specific aspects of social and economic progress across different nations. The Human Development Index tracks average achievements in health and education, while the Physical Quality of Life Index specifically emphasizes mortality and literacy rates. The Gender Development Index accounts for disparities between men and women. Finally, the Human Poverty Index focuses on deprivation rather than achievement, highlighting the basic needs unmet.

6. (B) Its PQLI score would be negatively impacted by the high infant mortality rate.
The Physical Quality of Life Index is calculated using three equally weighted indicators: literacy rate, life expectancy at age one, and infant mortality rate. Because it uses an unweighted average of these components, a significantly poor performance in one area will lower the overall score regardless of success in other areas. In this specific scenario, the high infant mortality rate directly reduces the country's development assessment.

7. (D) The networks, norms, and trust that facilitate cooperation among groups.
Social capital refers to the collective value of social networks and the inclinations that arise from these networks to do things for each other. It encompasses the norms of reciprocity, shared values, and mutual trust that enable individuals and groups to cooperate effectively for common goals. Unlike physical or financial capital, social capital exists in the relationships between people, serving as a vital resource for development.

NODIA

287. Ester Boserup's theory suggests that technological change in agriculture is primarily driven by:
(A) government subsidies and central planning.
(B) the discovery of new, uninhabited lands.
(C) pressure created by a growing population.
(D) a decline in the overall population.

288. Julian Simon's concept of humans as the 'ultimate resource' implies that:
(A) humans consume resources at an unsustainable rate.
(B) a larger population creates a greater pool of innovators and problem-solvers.
(C) population should be controlled to conserve intellectual resources.
(D) natural resources are more valuable than human ingenuity.

289. The views of Colin Clark and Ester Boserup share a common focus on how population pressure:
(A) leads to social collapse and conflict.
(B) causes irreversible environmental degradation.
(C) diverts investment away from industrial development.
(D) stimulates innovation, particularly within the agricultural sector.

290. An optimistic perspective on population, as articulated by Simon, would most likely interpret the challenge of resource scarcity as:
(A) a temporary issue that will be solved by human ingenuity and new technology.
(B) an unsolvable problem leading to societal collapse.
(C) a justification for stringent, government-mandated population control.
(D) a problem that is unrelated to the number of people.

Direction : Please read the following source carefully.

Moving beyond the stark dichotomy of pessimistic and optimistic viewpoints, a neutralist or revisionist perspective on population has emerged. This school of thought argues that there is no simple, universal relationship between population growth and economic development. Instead, it emphasizes the complexity of the linkages and asserts that the impact of population change is contingent upon a variety of other factors, including the social, economic, and institutional context. Proponents of this view call for a more nuanced study of the intricate connections rather than adhering to a dogmatically positive or negative stance. The work of Simon Kuznets, for instance, found little empirical evidence to support the strong negative claims of the pessimists or the strong positive claims of the optimists, suggesting that the relationship was weak or inconclusive. More recent research by scholars like Allan Kelly and Robert Schmidt, as well as David Bloom and Jeffrey Williamson, has furthered this perspective. They argue that the effects of population change depend heavily on the policy environment. For example, the economic impact of a changing age structure, such as a "demographic dividend," is not automatic but depends on policies related to education, health, labor markets, and trade. Therefore, the revisionist perspective concludes that population change is not a primary driver of development but rather a mediating factor whose influence is shaped by the institutional and policy framework.

Based on the above source, attempt the following five questions.

291. What is the central argument of the neutralist/revisionist perspective on population and development?
(A) Population growth is always a positive force for development.
(B) Population growth is always a negative force for development.
(C) The relationship between population and development is complex and context-dependent.
(D) There is no relationship whatsoever between population and development.

292. According to the revisionist view, what determines whether a demographic change has a positive or negative economic impact?
(A) The prevailing institutional and policy environment.
(B) The absolute size of the population.
(C) The geographical location of the country.
(D) The rate of technological change, which is independent of policy.

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16. (B) Population growth is an obstacle to development and depletes resources.
The pessimistic perspective on population and development argues that rapid population growth acts as a significant barrier to economic progress. Proponents of this view believe that increasing numbers of people place unsustainable pressure on finite natural resources and public services. This leads to the dilution of capital per worker, lower savings rates, and environmental degradation, ultimately trapped nations in a cycle of poverty and underdevelopment.

17. (B) geometric; arithmetic
Thomas Malthus proposed an influential theory stating that human populations naturally tend to increase at a geometric rate, which means they double periodically. In contrast, the production of food and essential resources only grows at an arithmetic rate through incremental additions. This inherent imbalance between population growth and resource availability inevitably leads to scarcity, unless checked by external factors like famine, disease, or conscious social restraint.

18. (A) Julian Simon : Population is the 'ultimate resource' and fuels progress.
Julian Simon was a prominent advocate of the optimistic perspective on population growth. He famously argued that human beings are the ultimate resource because their ingenuity and intellect can overcome scarcity through innovation and technological progress. According to this view, a larger population provides more minds to solve problems and create new resources, ultimately leading to higher standards of living and sustained economic development.

19. (C) Individuals acting in self-interest collectively deplete a shared resource.
The tragedy of the commons is a social and economic theory describing a situation where individuals, acting independently according to their own self-interest, behave contrary to the common good of all users by depleting a shared resource. In the context of population growth, this concept illustrates how increasing numbers of people can lead to the overexploitation and eventual destruction of communal assets like water or forests.

20. (A) 1, 3, 2, 4
The historical progression of population thought reflects changing economic and social realities. Malthus published his pessimistic essay in the late eighteenth century, followed by Ester Boserup's work on agricultural intensification in the mid-twentieth century. Later, the Club of Rome released the influential Limits to Growth study in the early nineteen-seventies. Finally, Julian Simon introduced his optimistic view regarding human resources as the ultimate asset during the early eighties.

21. (C) Savings and investment
The study by Coale and Hoover is a landmark piece of pessimistic literature regarding population dynamics. It primarily argued that rapid population growth in developing nations hinders economic development by reducing the capacity for national savings. Because a high proportion of children creates a heavy dependency burden, resources are diverted from productive capital investment toward immediate consumption and basic social services, thereby slowing down industrialization.

NODIA

22. (B) Ester Boserup
Ester Boserup challenged the Malthusian view by proposing that population growth can actually drive developmental progress, particularly in the agricultural sector. She argued that as population density increases, it creates pressure that induces farmers to adopt more intensive cultivation methods and innovative technologies. In this optimistic framework, population pressure is not a threat to survival but a necessary stimulus that triggers technological change and economic transition.

23. (D) The relationship is complex and dependent on social and economic context.
The neutralist or revisionist perspective on population argues that demographic growth is not the primary determinant of economic development. Instead, it suggests that the relationship between these two factors is complex and varies depending on a country's specific institutional, social, and economic conditions. Factors like government policy, market efficiency, and educational investment are seen as more critical in determining whether population growth becomes a benefit.

under socialism, a large population could be productively organized and supported.

Based on the above source, attempt the following five questions.

276. Which school of thought explicitly viewed a large population as a key component of national wealth and military power?
(A) Mercantilist views.
(B) Socialist and Marxist views.
(C) Greek philosophers' views.
(D) Confucian views.

277. How did the Socialist and Marxist perspectives differ from pro-natalist arguments regarding population issues?
(A) They argued that overpopulation was the single greatest threat to humanity.
(B) They advocated for strict population control measures in all societies.
(C) They believed a small population was essential for a successful socialist state.
(D) They attributed problems like poverty to inequitable resource distribution, not population size.

278. The writings of the Chinese philosopher Confucius are mentioned in the context of:
(A) an argument for unlimited population growth.
(B) a concern for balancing population with available land and resources.
(C) a rejection of any link between population and prosperity.
(D) a pro-natalist view identical to that of the Mercantilists.

279. The passage suggests that a common thread among Greek philosophers, Mercantilists, and Physiocrats was that they:
(A) all viewed population growth as a severe obstacle to development.
(B) all advocated for a socialist system of resource distribution.
(C) all considered population size in relation to state or economic objectives.
(D) all believed that population issues were irrelevant to politics.

280. A "pro-natalist and prosperity argument" as described in the text would most likely support which of the following policies?
(A) A law limiting family size to one child to conserve resources.
(B) A policy of redistributing wealth without addressing population size.
(C) A state initiative focused solely on environmental protection.
(D) A government program providing incentives for families to have more children.

Direction : Please read the following source carefully.

The pessimistic perspective on population growth posits that a rapidly expanding population is a significant obstacle to economic development and environmental sustainability. This viewpoint is most famously associated with Thomas Malthus, whose theory argued that population, when unchecked, increases at a geometrical rate while the food supply increases at an arithmetical rate, leading inevitably to poverty and famine. This Malthusian concern was modernized in the 20th century by studies like the Coale and Hoover study, which argued that high fertility and rapid population growth in low-income countries divert resources from productive investments into social overhead, thus slowing per capita income growth. Another influential concept is the "Tragedy of the Commons," which illustrates how shared, unregulated resources are inevitably depleted by individuals acting in their own self-interest, a problem exacerbated by population pressure. The "Limits to Growth" study further reinforced this pessimism by using computer models to predict that exponential growth in population and consumption would lead to a collapse of global systems. Finally, Enke's investment model provided an economic rationale for population control, calculating the high cost of an additional birth and framing investment in family planning as more economically productive than investments in traditional development projects.

Based on the above source, attempt the following five questions.

281. What is the core argument of the Malthusian theory of population?
(A) Population growth tends to outstrip the growth of the food supply.

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32. (B) Excess labor whose removal would not reduce total production output.
Disguised unemployment is a situation where more workers are employed in an activity than are actually required to maintain current levels of production. In such cases, the marginal productivity of the extra labor is effectively zero, meaning that if these surplus workers were removed, total output would remain unchanged. This phenomenon is frequently observed in the agricultural sectors of developing economies where family labor.

33. (C) Seasonal unemployment
Seasonal unemployment occurs when individuals are jobless during specific times of the year because the demand for their particular type of labor varies with the seasons. This is common in industries like construction, which may slow down during monsoons, or agriculture, where labor needs peak during harvesting but drop significantly during other periods. This type of unemployment is temporary and recurs annually following the cycle.

34. (D) Temporary unemployment experienced by individuals changing jobs.
Frictional unemployment is a natural and short-term form of joblessness that occurs when individuals are in the process of moving from one job to another. It represents the time lag involved in matching workers with appropriate job openings in a dynamic economy. This type of unemployment is generally considered a sign of a healthy, mobile labor market where workers are seeking better opportunities or better.

35. (A) Both A and R are true and R is the correct explanation of A.
Rapid population growth significantly increases the total demand for food within a nation. If the agricultural sector cannot improve its productivity or expand its output at a rate that matches this growing demand, the country may face severe food shortages and rising prices. This relationship highlights how demographic pressure can strain essential resource systems, making technological advancement in farming a critical requirement for maintaining national food security.

36. (B) Downward pressure on wages and higher unemployment.
According to basic economic principles, when the supply of labor increases rapidly without a matching increase in the demand for workers, a surplus of labor is created. This imbalance typically leads to higher unemployment rates and puts downward pressure on prevailing wages. In such environments, workers have less bargaining power, and the competition for limited job opportunities becomes more intense, potentially leading to.

37. (D) It leads to an increase in per capita natural resource availability.
Rapid population growth typically has several negative implications for social and environmental systems. It increases the demand for housing, potentially leading to overcrowding, and places significant strain on public services like health and education. Furthermore, it can worsen water scarcity and sanitation issues. Contrary to increasing resource availability, more people actually reduce the per capita share of finite natural resources like land and fresh.

38. (B) The greenhouse effect
The greenhouse effect is a natural process where certain gases in the Earth's atmosphere, such as carbon dioxide and methane, trap heat that would otherwise escape into space. This process keeps the planet warm enough to sustain life. However, human activities like industrialization and deforestation have increased the concentration of these gases, enhancing the effect and leading to a gradual rise in global temperatures.

39. (A) Global warming
Global warming refers to the observed century-scale rise in the average temperature of the Earth's climate system and its related effects. This phenomenon is primarily driven by human activities that release greenhouse gases into the atmosphere, trapping solar heat. The consequences of global warming include rising sea levels, changes in precipitation patterns, and more frequent extreme weather events, all of which pose significant challenges to human development.

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106. (B) Education and healthcare.
The investment in human capital approach views spending on the population as an economic strategy. By allocating funds toward education and healthcare, a nation improves the skills, knowledge, and physical capacity of its citizens. This leads to a more productive and innovative workforce, which is a primary driver of long-term economic growth. In this view, such expenditures are not merely costs.

107. (D) Physical Quality of Life Index (PQLI)
The Physical Quality of Life Index was specifically designed to measure the basic outcomes of development without relying on economic or monetary indicators. By focusing purely on social variables—literacy, infant mortality, and life expectancy—it provides a direct assessment of how well a society is meeting the basic needs of its people. This allows for comparisons of well-being that are independent of.

108. (A) Social structures, cultural norms, and behavior patterns.
Social change is a broad concept that describes the long-term transformation of a society. It involves fundamental shifts in social structures, such as family patterns or political systems, as well as changes in cultural norms, values, and common behaviors. These changes can be driven by various factors, including technological innovation, economic shifts, or social movements, and they result in lasting differences.

109. (A) Renewable resources can replenish themselves within a human lifespan, while non-renewable resources cannot.
The primary distinction between renewable and non-renewable resources lies in their rate of replenishment. Renewable resources, like solar energy or timber from a managed forest, can be restored through natural processes on a human timescale. Non-renewable resources, such as fossil fuels and minerals, exist in finite amounts and take millions of years to form. Once consumed, these resources cannot be replaced.

110. (D) 1, 2, 3, and 4
Development depends on the effective utilization of various types of resources. Natural resources provide the raw materials from the earth, while capital resources include the man-made tools and infrastructure used in production. Human resources encompass the labor and skills of the population. Technology acts as a critical multiplier, enhancing the productivity and efficiency of all other resource types. Together, these elements form.

111. (D) A factory worker in a declining industry who has been jobless for over a year.
Chronic unemployment refers to long-term, persistent joblessness that typically lasts for a year or more. It is often caused by deep-seated structural issues in the economy, such as the decline of a major industry or a significant mismatch between worker skills and market needs. Unlike seasonal or frictional unemployment, which are temporary, chronic unemployment is a more severe problem that.

112. (B) Certain gases in the atmosphere trap outgoing thermal radiation.
The greenhouse effect is a physical process where specific gases in the atmosphere, known as greenhouse gases, absorb thermal radiation emitted from the Earth's surface. Instead of escaping into space, this heat is trapped within the atmosphere, keeping the planet warm. While this is a natural and necessary process for life, human activities have significantly increased the concentration of these gases, leading.

113. (B) Balanced with the environment's capacity to support them.
A sustainable human eco-system is achieved when societies live within the carrying capacity of their natural environment. This requires that the consumption of resources and the production of waste do not exceed the Earth's ability to regenerate those resources and absorb the waste. Achieving this balance is fundamental to sustainable development, as it ensures that human activities do not lead to.

114. (D) The Neutralist/revisionist perspective.
The neutralist or revisionist perspective argues that population growth is not the primary driver of economic success or failure. Instead, this viewpoint suggests that the impact of demographic change is mediated by other factors, such as the quality of government policies, the efficiency of markets, and the strength of

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48. (B) Education levels, health outcomes, and social cohesion.
The Social Development Index is a tool used to measure a nation's social progress beyond traditional economic metrics. It focuses on indicators that reflect the well-being of the population and the health of social structures. These typically include educational attainment, health and nutritional status, and levels of social cohesion and safety. By prioritizing these human dimensions, the index provides a more comprehensive view of.

49. (D) Ensure sustainable consumption and production patterns.
The Millennium Development Goals were eight international development targets established in 2000 to be achieved by 2015. These goals included eradicating extreme poverty, achieving universal primary education, and ensuring environmental sustainability. While sustainable consumption and production are critical for development, they were only explicitly introduced as a dedicated goal under the Sustainable Development Goals framework, which succeeded the MDGs in 2015 with a more.

50. (B) P-4, Q-3, R-2, S-1
Environmental issues result from various contributing factors, often linked to human activity and resource management. Global warming is primarily caused by the accumulation of greenhouse gases in the atmosphere. Soil erosion involves the removal of topsoil by wind and water, while deforestation is driven by the clearing of forests for agricultural expansion. Soil salinity frequently results from improper irrigation practices in arid regions. Understanding these.

51. (D) Decreasing fertility and increasing life expectancy.
Population ageing is a direct demographic result of the later stages of the demographic transition. It occurs when fertility rates decline, leading to a smaller proportion of children, and life expectancy increases due to better healthcare, resulting in more people living into old age. This combination shifts the age distribution of the entire population toward older groups, presenting unique social and economic challenges for governments.

52. (A) A large and growing population is beneficial for a nation's wealth and power.
The pro-natalist and prosperity argument is based on the belief that a large and growing population is a source of national strength and economic vitality. Proponents of this view argue that more people provide a larger labor force, a bigger domestic market, and greater military potential. This perspective historically influenced state policies aimed at encouraging high birth rates to enhance the country's wealth.

53. (C) Mercantilists
The Mercantilist school of thought, dominant in Europe from the 16th to the 18th century, strongly advocated for large and growing populations. They viewed human beings as a form of national wealth and a primary source of military and economic power. By encouraging population growth, Mercantilists aimed to ensure a steady supply of low-cost labor and soldiers, which they believed were essential for.

54. (D) An optimum population size in relation to resources.
The writings of the ancient Chinese philosopher Confucius suggest an early concern for the balance between population size and available natural resources. He argued that there is an ideal or optimum population level for any given territory. If the population exceeds this level, it can lead to poverty and social disorder, whereas a population that is too small might struggle to utilize resources.

55. (B) 1, 2, 3, 4
The history of population thought has progressed through several distinct phases. Mercantilist pro-natalist views were prominent early on, followed by the emergence of Malthusian pessimism in the late 18th century. In the mid-20th century, Ester Boserup introduced her optimistic theory on agricultural intensification. Finally, the late 20th century saw the rise of neutralist or revisionist perspectives, which emphasized the context-dependent nature of the population-development relationship.

56. (B) Exponential growth within a finite system would lead to collapse.
The Limits to Growth study, published in 1972, used computer models to simulate the

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40. (D) 1, 2, 3, and 4
Unemployment manifests in various forms within an economy, each with distinct causes and characteristics. Disguised unemployment is prevalent in agriculture, while frictional unemployment is a natural, short-term result of workers changing jobs. Seasonal unemployment is tied to specific times of the year in certain industries, and chronic unemployment represents a persistent, long-term lack of jobs. Understanding these different types is essential for designing effective.

41. (D) Desertification
Desertification is a type of land degradation in which relatively dry areas of land become increasingly arid and lose their bodies of water as well as vegetation and wildlife. It is caused by a variety of factors, such as climate change and human activities like deforestation, overgrazing, and unsustainable agricultural practices. This process reduces the productivity of the land, making it difficult for populations to support themselves.

42. (B) Soil erosion
Soil erosion is the displacement of the upper layer of soil, which is the most fertile part, by physical agents like water and wind. While it is a natural process, human activities such as deforestation, improper farming, and overgrazing significantly accelerate it. When soil is removed faster than it can be formed, the land loses its agricultural productivity and its ability to store water.

43. (C) Both natural and human factors.
An ecological imbalance occurs when the natural equilibrium of an ecosystem is disrupted, affecting the survival and distribution of species. These imbalances can be triggered by natural events such as volcanic eruptions, earthquakes, or climate shifts. Increasingly, however, human activities like pollution, deforestation, and resource overexploitation are the primary causes of ecological disruption. Both natural and anthropogenic factors contribute to the complexity of environmental.

44. (D) An ecosystem where human activities ensure long-term environmental health.
A sustainable human eco-system is defined as an environment where human activities and social structures are integrated with natural processes in a way that supports long-term ecological health. This concept implies that human development does not exceed the carrying capacity of the environment. In such a system, resources are used efficiently, waste is minimized, and biodiversity is preserved to ensure that the ecosystem remains functional for.

45. (D) 1, 2, 3, 4, and 5
Human activities, significantly accelerated by rapid population growth, contribute to a wide range of environmental degradation issues. These include air pollution from industrial emissions, the enhanced greenhouse effect leading to global warming, and widespread deforestation for land expansion. Furthermore, improper land management and irrigation practices result in severe soil erosion and increased soil salinity. These interconnected problems highlight the immense pressure that growing populations place on the Earth's.

46. (A) The direct provision of public services like health, education, and housing.
The welfare approach to human-centered development focuses on the government's role in improving the quality of life for its citizens. It prioritizes the direct provision of essential public services, such as healthcare, education, and affordable housing, as a primary means of social progress. This perspective views these services as fundamental rights and believes that state intervention is necessary to ensure that even the most vulnerable.

47. (D) Social Capital : Financial wealth held by non-governmental organizations.
Development and sociological studies use specific terms to describe various processes and resources. Social change involves significant alterations in culture and behavior, while social development is a planned process to improve well-being. Sustainable development focuses on meeting current needs without harming future generations. However, social capital does not refer to financial wealth; instead, it describes the networks, trust, and norms that facilitate cooperation within.

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that workers possess and the requirements of the available jobs. This often happens due to technological changes, shifts in the economy's structure, or changes in consumer demand that render certain skills obsolete. Unlike temporary frictional unemployment, structural unemployment is long-term and requires significant retraining or geographic relocation of workers to.

65. (D) 1, 2, 3, and 4
Economic and social development significantly influences population dynamics in multiple ways. Improved healthcare and sanitation lead to lower death rates, while education and female empowerment are strongly correlated with declining fertility. Urbanization alters family size norms and the economic roles of children. Furthermore, development leads to an age structure transition that can create a demographic dividend. These interconnected processes show how progress.

66. (B) Accelerated depletion of non-renewable resources
Rapid population growth places immense pressure on the natural environment, particularly through the accelerated consumption of non-renewable resources. As the number of people increases, the demand for minerals, fossil fuels, and other finite materials grows, leading to their faster depletion. This trend challenges the principles of sustainable development, as it reduces the resource base available for future generations and often results in.

67. (D) Soil conservation and afforestation programs.
Population growth exerts significant pressure on land use, leading to various forms of environmental degradation. Common manifestations include deforestation to create new farmland, urban sprawl onto agricultural areas, and the over-intensification of farming on existing plots, which leads to soil exhaustion. In contrast, soil conservation and afforestation programs are proactive management strategies aimed at mitigating environmental damage, rather than being negative consequences of population.

68. (C) Soil salinity
Soil salinity is a process where the salt content in the upper layers of the soil increases to levels that are harmful to plants. This often occurs in arid and semi-arid regions where improper irrigation practices lead to waterlogging. When excess water evaporates from the soil surface, it leaves behind dissolved salts, eventually making the land unproductive for agriculture. This environmental issue is.

69. (B) Recognizing environmental problems and taking actions to mitigate them.
Human perception and adjustment to ecological imbalance involves the cognitive and behavioral processes through which societies respond to environmental degradation. It begins with the recognition of an environmental problem, such as pollution or resource scarcity. Once perceived, societies may develop and implement various adjustment strategies, including technological innovation, policy changes, conservation efforts, or migration, to mitigate the negative impacts and restore a.

70. (A) 1, 2, and 3 only
Different viewpoints provide diverse insights into the relationship between population and development. The pessimistic view highlights resource strain, the optimistic view emphasizes human innovation, and the neutralist view stresses the role of mediating factors. However, Malthus is the foundational figure for the pessimistic, not optimistic, perspective. Similarly, Ester Boserup argued that population pressure induces agricultural innovation and intensification, rather than causing stagnation.

71. (D) Foster international cooperation on global environmental issues.
International protocols are formal agreements between nations designed to address environmental problems that transcend national borders. Because issues like climate change, ozone depletion, and biodiversity loss are global in nature, no single country can solve them alone. These protocols provide a structured framework for nations to cooperate, set common targets, and coordinate their efforts to protect the global environment for current and future.

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72. (A) Integrate population stabilization with sustainable development.
In the Indian context, development plans and policies are designed to balance the needs of a large population with the necessity of protecting the environment. These strategies aim to achieve population stabilization through voluntary programs while simultaneously promoting sustainable economic growth. By integrating these goals, the government seeks to improve the quality of life for all citizens without compromising the ecological health.

73. (B) Population growth and economic development.
As countries undergo economic development, their employment structure typically shifts from a reliance on the primary sector, such as agriculture, to the secondary and tertiary sectors, including industry and services. This structural change is often accompanied by population growth and urbanization. Higher productivity in agriculture allows workers to move into more technologically advanced sectors, leading to a more diversified and complex.

74. (D) Gross National Product (GNP) growth
The human-centered development paradigm represents a fundamental shift in how progress is measured and pursued. Traditionally, development was often equated purely with the growth of Gross National Product. However, this new paradigm prioritizes the well-being, rights, and capabilities of individuals. It emphasizes that economic growth should be a means to an end—improving human lives—rather than being the sole objective of.

75. (A) P-4, Q-3, R-1, S-2
Demographic concepts describe different aspects and stages of population change. The demographic transition refers to the historical shift from high to low vital rates. The age structure transition involves a shift toward a larger proportion of working-age adults, which can create a demographic dividend of economic growth. Finally, population ageing is the process where the median age increases and the proportion of elderly.

76. (C) Gender Development Index (GDI)
The Gender Development Index is a measure of human development that accounts for disparities between men and women. It uses the same indicators as the Human Development Index—longevity, knowledge, and standard of living—but adjusts the results based on the level of inequality between the genders. By doing so, it highlights how much a country's overall human development achievement is reduced due.

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77. (B) Deprivation in dimensions like longevity, knowledge, and standards.
The Human Poverty Index was designed to complement income-based measures of poverty by focusing on deprivation. Instead of looking at how much money people earn, it measures the percentage of the population lacking essential elements of human development. These include the probability of not surviving to a certain age, the adult illiteracy rate, and the lack of access to clean water and.

78. (B) A universal, integrated, and more comprehensive agenda.
The transition from the Millennium Development Goals to the Sustainable Development Goals marked a significant expansion in the global development agenda. While the MDGs were primarily focused on poverty in developing countries, the SDGs are universal and apply to all nations. They integrate the economic, social, and environmental dimensions of development more deeply and include new goals related to peace, justice, and industrial.

79. (C) Pessimistic
The pessimistic perspective on population growth is rooted in the belief that increasing human numbers inevitably lead to resource scarcity and economic stagnation. Proponents of this view argue that rapid population growth places an unsustainable burden on a country's infrastructure, services, and natural capital. This strain diverts resources away from productive investments, making population growth a major obstacle to achieving higher levels.

80. (A) Both A and R are true and R is the correct explanation of A.
Technological advancements are a critical tool for addressing the challenges of resource scarcity. By

developing more efficient production methods, technology can increase the productivity of existing assets and extract more value from fewer resources. Furthermore, innovation leads to the discovery of new resources and the creation of synthetic substitutes for those that are being depleted. This ability to adapt through technology.

81. (A) Disguised unemployment
Disguised unemployment is a common phenomenon in sectors with surplus labor, particularly in subsistence agriculture. It refers to a situation where people appear to be employed, but their actual contribution to the total output is negligible or zero. If these workers were removed from the workforce, the total production would not decrease. This indicates that the labor force is being used.

82. (A) Population growth and rural-to-urban migration.
Rapid population growth, combined with the movement of people from rural areas to cities, creates immense pressure on urban infrastructure. This trend often leads to a shortage of affordable housing, resulting in the growth of slums and overcrowding. Additionally, it strains public services like sanitation, transportation, and water supply, which struggle to keep pace with the increasing demand, posing.

83. (D) Anthropogenic ecological imbalance.
Anthropogenic ecological imbalance refers to disruptions in natural ecosystems that are caused by human activities. Unlike natural disturbances, these imbalances result from actions such as pollution, deforestation, habitat destruction, and the overexploitation of natural resources. These activities can lead to the loss of biodiversity, climate change, and the degradation of essential ecosystem services, ultimately threatening both environmental health and human well-being.

84. (A) Maintaining a stable and well-governed city-state.
Ancient Greek philosophers, such as Plato and Aristotle, viewed population size primarily through the lens of political stability and social order. They believed that a city-state should have an ideal number of citizens—large enough to be self-sufficient and defend itself, but small enough to be effectively governed and for citizens to know one another. Their focus was on achieving a.

85. (D) 1, 2, 3, and 4
Intellectual history is filled with diverse perspectives on the relationship between population and society. Physiocrats linked population to agriculture, while Socialists blamed poverty on capitalist structures. The Coale and Hoover study highlighted how rapid growth can hinder savings and investment. Meanwhile, optimistic thinkers like Condorcet believed in the power of human progress to overcome demographic challenges. Each of these views has.

86. (C) Neutralist/Revisionist, with qualifications
The neutralist or revisionist perspective recognizes that a large, young population can potentially provide a demographic dividend. However, this viewpoint adds the qualification that such a benefit is not automatic. It depends on whether the country has the right policies, institutions, and investments in place to provide education, healthcare, and productive employment for its young people. Without these conditions, a large.

87. (D) The demand for a resource exceeds its available supply.
Resource scarcity is an economic and environmental condition that arises when the desire for a particular resource is greater than the available amount. This imbalance can occur because the resource is finite, like fossil fuels, or because the rate of consumption is faster than the rate of natural replenishment, as with fresh water. Scarcity forces societies to make choices about how.

88. (D) The birth rate of the population.
The demand for labor in an economy is determined by firms and organizations that need workers to produce goods and services. This demand is influenced by the overall level of economic activity, the technology being used, and the prevailing wage rates. While the birth rate affects the future supply of labor, it does not directly determine the current demand for workers.

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consequences of rapid population and economic growth on a planet with finite resources. Its central argument was that exponential growth cannot continue indefinitely within a closed system. The study warned that if existing trends in population, industrialization, and resource depletion continued, the Earth would eventually face a catastrophic collapse in its economic.

57. (C) Population control investment is more cost-effective than traditional development.
Stephen Enke's investment model, a prominent part of the pessimistic population literature, used cost-benefit analysis to argue for birth control. He suggested that government spending on population control programs would yield much higher economic returns than investments in traditional development projects like factories or infrastructure. By reducing fertility, countries could lower the dependency ratio and increase per capita income more efficiently than through industrial expansion.

58. (B) He suggested population growth could stimulate development and density benefits.
Colin Clark was a leading proponent of the optimistic perspective on population. He argued that population growth, by increasing population density, could act as a powerful stimulus for economic development. According to Clark, higher density can lead to improved infrastructure, better division of labor, and more efficient transport systems. He believed that these benefits of density could outweigh the challenges posed by larger numbers.

59. (D) Malthus saw population pressure leading to crisis; Boserup saw it inducing innovation.
A fundamental difference between Thomas Malthus and Ester Boserup lies in their view of how technology responds to population pressure. Malthus believed that food production is limited by technological constraints and cannot keep up with population growth, leading to inevitable crisis. In contrast, Boserup argued that population pressure is the primary driver of technological change, forcing societies to innovate and adopt more intensive.

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60. (A) Both A and R are true and R is the correct explanation of A.
The neutralist or revisionist perspective emerged to challenge the deterministic views of both extreme pessimists and optimists. Thinkers like Simon Kuznets argued that demographic change does not have a single, universal effect on development. Instead, the outcome depends on a variety of mediating factors, including a country's political institutions, social structure, and economic policies. This view emphasizes that the population-development link.

61. (D) Poverty is caused by capitalist structures, not by population numbers.
Socialist and Marxist thinkers have traditionally rejected the idea that overpopulation is the root cause of poverty and social distress. Instead, they argue that these problems are the result of the capitalist system of production and the unequal distribution of wealth. From this perspective, the perceived "surplus population" is actually a surplus of labor created by capitalist mechanisms, and a reorganized socialist society.

62. (C) Capital resources
Capital resources refer to the man-made assets, such as machinery, infrastructure, and financial savings, used in the production process. Demographic factors, particularly the age structure of a population, significantly influence these resources. A high proportion of dependents can reduce national savings, as more income is spent on immediate consumption. Conversely, a large working-age population can boost savings and investment, facilitating long-term economic.

63. (C) All persons who are either employed or unemployed and seeking a job.
The labor force is a fundamental quantitative measure of a nation's human resources. It includes all individuals who are either currently working for pay or are actively looking for a job and are available to work. This metric excludes those who are outside the labor market, such as children, retirees, and individuals who are not seeking employment, providing a clear picture of the.

64. (B) Structural unemployment
Structural unemployment occurs when there is a persistent mismatch between the skills

believed that more people lead to more ideas, technological innovations, and improved ways of using resources. From this perspective, human ingenuity is the "ultimate resource" that can overcome any physical limitations, making a larger population a benefit rather than.

98. (D) Untapped mineral reserves in the ground
Capital resources are human-made assets used in the production of other goods and services. They include physical items like machinery, tools, and infrastructure, as well as financial investments and accumulated technological knowledge. In contrast, untapped mineral reserves are considered natural resources. While they have the potential to become capital once extracted and processed, they are not yet man-made aids to production.

99. (B) The population's size, age structure, and participation rates.
The supply of labor in a country is determined by the number of people who are willing and able to work. This is most directly influenced by total population size and the age structure, which determines how many people are in the working-age group. Additionally, labor participation rates—reflecting how many eligible people actually choose to join the workforce—play a crucial role in.

100. (B) P-3, Q-2, R-1, S-4
Diverse thinkers have provided foundational ideas in the study of population and resources. Ester Boserup focused on agricultural innovation driven by population pressure, while Garrett Hardin explored the collective depletion of shared resources. Robert Malthus introduced the influential idea that population growth naturally outpaces food supply. Revisionists like Allan Kelly argued for a more nuanced understanding, suggesting that the population-development relationship is context-dependent.

101. (D) Age structure transition.
An age structure transition is a demographic process that occurs as a country moves through different stages of the demographic transition. Initially, a population may be very young with many children. As birth rates fall and life expectancy rises, the population shifts, first toward a larger working-age group and eventually toward a higher proportion of elderly people. This transition has significant economic and.

102. (A) The release of industrial effluents into a river
Ecological imbalances can be caused by both natural events and human activities. Natural factors include tsunamis, volcanic eruptions, and earthquakes, which are part of the Earth's physical processes. In contrast, the release of industrial effluents into a river is a direct human-caused factor. Such anthropogenic activities introduce pollutants that disrupt aquatic life and water quality, leading to a man-made ecological imbalance that.

103. (D) The intricate interrelationships between population, development, and environment.
India's development strategy reflects an advanced understanding that population dynamics, economic progress, and environmental health are deeply interconnected. Policymakers recognize that a growing population increases the demand for resources and services, which can impact the environment. Conversely, a healthy environment and sustainable development are necessary to support the well-being of the population. This integrated approach is essential for achieving long-term national.

104. (A) It can mask significant inequalities in wealth distribution within a society.
Per capita income is calculated by dividing a country's total economic output by its population. While it provides a useful average, its major limitation is that it does not show how income is distributed among citizens. A country could have a high per capita income even if a small elite holds most of the wealth while the majority lives in poverty. Therefore, it.

105. (A) Both A and R are true and R is the correct explanation of A.
Pessimistic theories argue that rapid population growth can hinder the formation of capital in developing nations. When a population has a high proportion of children, it creates a heavy dependency burden. Families and the government must spend a large share of their income on basic needs like food, health, and primary education. This reduces the amount of money that can be.

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89. (C) An increased need for schools, teachers, and educational materials.
Rapid population growth creates a large and growing young population that requires access to schooling. This demographic pressure places a significant burden on the education system, necessitating the construction of more schools, the training of more teachers, and the provision of more educational materials. Ensuring quality education for a rapidly increasing number of students is a major challenge for many developing.

90. (C) 1, 3, and 4
Sustainable development is a comprehensive framework that balances economic, social, and environmental goals. A key principle is inter-generational equity, which ensures that the needs of current and future populations are both met. The concept was brought into the global spotlight by the Brundtland Commission's 1987 report. Contrary to some misconceptions, sustainable development does not reject economic growth but rather seeks to make.

91. (A) Long-term changes in temperature, precipitation, and wind patterns.
Climate change is a comprehensive term that describes significant, long-term shifts in the Earth's global or regional climate patterns. While global warming refers specifically to the rise in the Earth's average surface temperature, climate change also encompasses changes in precipitation, wind patterns, and the frequency of extreme weather events. These shifts are increasingly driven by human activities that alter the composition of the.

92. (A) Human adjustment to ecological imbalance through policy.
When governments create guidelines and regulations for environmental protection, they are engaging in a form of planned social and political adjustment. These policies are a response to the recognition of environmental degradation and ecological imbalances. By setting standards for pollution, resource use, and conservation, nations attempt to mitigate human impact on nature and steer development toward a more sustainable and.

93. (C) Life expectancy at age one, infant mortality, and literacy rate.
The Physical Quality of Life Index was developed as a non-monetary measure of development and well-being. It focuses on three specific indicators that reflect basic health and educational outcomes: the literacy rate, the infant mortality rate, and life expectancy at age one. By averaging these three components, the index provides a simple way to compare the social progress of different.

94. (B) The widespread adoption of mobile phones and its impact on communication patterns.
Social change refers to the significant alteration of social structures, cultural symbols, behaviors, or value systems over time. The widespread adoption of technology, such as mobile phones, is a prime example because it has fundamentally changed how people interact, share information, and organize their daily lives. Unlike seasonal changes or market fluctuations, social change involves deep and lasting transformations in the.

95. (A) 1, 2, 3, 4
The global community has reached several key milestones in its understanding of growth and sustainability. The 1972 publication of "Limits to Growth" raised early alarms, followed by the Brundtland Report in 1987 which defined sustainable development. In 2000, the Millennium Development Goals were adopted to target poverty. Finally, the Sustainable Development Goals were established in 2015 as a more universal and.

96. (B) Bloom and Williamson
David Bloom and Jeffrey Williamson are prominent economists whose research highlighted the significant role of changing age structures in economic development. They analyzed how the transition from high to low fertility can create a demographic dividend—a period when the working-age population grows faster than the dependent population. Their work emphasized that this "gift" of a favorable age structure can significantly boost national.

97. (C) An optimist like Julian Simon.
An optimist would argue that population growth can be a powerful engine for development. Julian Simon, a leading proponent of this view,

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institutions. This perspective shifts the focus away from population size alone toward.

115. (D) 1, 2, 3, 4, and 5
Various development and poverty indices provide different ways to measure progress and deprivation. The HDI combines health, education, and income, while the PQLI focus on health and literacy outcomes. The GDI and SDI adjust for gender inequality and broader social well-being, respectively. The HPI measures deprivation in the same dimensions as the HDI. Together, these tools offer a comprehensive framework for.

116. (B) Low birth rate and low death rate.
The final stage of the demographic transition model occurs when a country achieves a state of demographic stability. In this stage, both birth rates and death rates have declined to low levels. This leads to a slow-growing or stable population size and is typically associated with high levels of economic development, improved healthcare, and widespread access to education and family planning.

117. (B) Pro-natalist, favoring large populations.
The classical Mercantilist view, prevalent in early modern Europe, was strongly pro-natalist. Mercantilists believed that a large and growing population was essential for increasing the state's military strength and economic output. They viewed human beings as a form of national wealth that provided a steady supply of labor and soldiers, both of which were seen as critical for national power.

118. (A) Human ingenuity and technological progress, spurred by more people, can solve resource problems.
Julian Simon's optimistic perspective is based on the belief that human beings are the ultimate resource. He argued that population growth provides more creative minds to solve problems and develop new technologies. In the long run, this ingenuity leads to the creation of more resources and more efficient ways of living, which can overcome any temporary scarcities. For Simon, people.

119. (C) Lower the rate of household savings due to higher consumption needs.
A high dependency ratio means that a large part of the population is composed of people who are not in the workforce, such as children and the elderly. This demographic structure tends to lower national savings because a significant portion of household income must be spent on the immediate consumption needs of these dependents. This reduction in savings can limit the.

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120. (C) P-4, Q-3, R-1, S-2
Unemployment takes several distinct forms, each with its own specific causes. Disguised unemployment occurs when excess labor does not add to production. Seasonal unemployment is tied to specific times of the year, while frictional unemployment is a temporary result of moving between jobs. Chronic unemployment is a long-term, persistent problem. Distinguishing between these types is essential for developing targeted policies to.

121. (D) An increasing demand for electricity, fuel, and other forms of energy.
As the global population grows, the total demand for energy naturally increases. More people require more electricity for their homes, more fuel for transportation, and more energy for the industrial and agricultural sectors that support them. This rising demand places significant pressure on both renewable and non-renewable energy resources, highlighting the need for more efficient energy use and the development.

122. (B) More land for agriculture and settlement.
Deforestation is the large-scale removal of forests, a process often driven by the needs of a growing population. As more people require food and housing, forests are cleared to create space for new agricultural land and urban settlements. While this provides immediate benefits for human expansion, it leads to the loss of biodiversity, disrupts water cycles, and contributes significantly to.

123. (C) Human perception and adjustment.
Human perception and adjustment is a socio-ecological process where people recognize environmental changes and take action to adapt. This might involve developing new

technologies, changing consumption patterns, or implementing conservation policies. This ability to perceive and respond to ecological imbalances is a key factor in human resilience and is essential for achieving long-term sustainability in the face of environmental challenges.

124. (D) Global climate change.
Global climate change is an environmental issue that affects the entire planet, requiring a coordinated international response. Protocols like the Kyoto Protocol and the Paris Agreement are examples of such cooperation. They provide a framework for nations to work together to reduce greenhouse gas emissions and adapt to the impacts of a warming world. These agreements recognize that global problems cannot.

125. (A) Both A and R are true and R is the correct explanation of A.
The demographic dividend is a potential economic benefit, but it is not a guaranteed outcome of a favorable age structure. For a large working-age population to drive economic growth, a country must have the right social and economic conditions. This includes investments in education to create a skilled workforce, healthcare to ensure people are healthy, and a stable governance environment.

126. (B) Socialist and Marxist views
Socialist and Marxist views offer a systemic critique of poverty, arguing that it is caused by the structure of capitalist society rather than by population numbers. From this perspective, poverty results from the exploitation of labor and the unequal distribution of resources. They believe that a socialized economy, which prioritizes the needs of all people, could provide a decent standard.

127. (B) Economically active population
The economically active population is a central concept in the study of human resources. It refers to the portion of the population that is either currently employed or is actively looking for work. This group represents the actual labor supply of a nation. Understanding its size, age structure, and skill level is essential for economic planning and for assessing a country's.

128. (B) More healthcare infrastructure, personnel, and medical supplies.
Population growth directly increases the demand for all types of healthcare services. To maintain or improve the health of their citizens, growing nations must invest in more hospitals, clinics, and medical equipment. They also need to train and employ more doctors, nurses, and other healthcare professionals. This increased pressure on the health system is a significant challenge for developing countries.

129. (B) A major volcanic eruption that alters regional climate.
Ecological imbalances can be caused by natural events that are beyond human control. A major volcanic eruption is a prime example, as it can release vast amounts of ash and gases into the atmosphere, leading to significant changes in local and regional climate. Such events can disrupt ecosystems, affect agricultural production, and cause widespread environmental change, showing that nature itself can.

130. (D) 1, 2, 3, and 4
The pessimistic perspective on population growth is supported by several key theories and studies. Thomas Malthus provided the foundational argument, while the Coale and Hoover study analyzed its negative impact on national savings. The 'Tragedy of the Commons' illustrates the risk of shared resource depletion. Together, these ideas form a consistent viewpoint that rapid population growth can be a significant.

131. (D) Highlight gender-based disparities in human development achievements.
The Gender Development Index is a critical tool for identifying and measuring the gap in development between men and women. By comparing the Human Development Index (HDI) scores for males and females, the GDI highlights where gender inequalities exist in areas like health, education, and standard of living. This information is vital for policymakers to design programs that promote gender.

132. (D) More comprehensive, integrated, and universally applicable.
The Sustainable Development Goals represent a significant advancement over the earlier Millennium Development Goals. The SDGs are

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a more comprehensive and integrated set of 17 goals that apply to all countries, both developed and developing. They place a greater emphasis on environmental sustainability, social justice, and economic prosperity, providing a universal roadmap for a better and more sustainable future for everyone.

133. (C) The death rate falls significantly while the birth rate remains high.
The second stage of the demographic transition is characterized by a period of rapid population growth. This occurs when death rates fall sharply due to improvements in nutrition, sanitation, and healthcare, while birth rates remain high. The resulting large gap between birth and death rates leads to a population explosion. Most developing countries have experienced this phase as they began to.

134. (D) Ester Boserup : Pessimistic
Different thinkers are associated with distinct perspectives on the population-development relationship. Julian Simon is an optimist who believes in human ingenuity, while Thomas Malthus is a classic pessimist. Simon Kuznets represents the neutralist or revisionist view. However, Ester Boserup is not a pessimist; she is an optimist who argued that population pressure is a primary driver of agricultural innovation and progress.

135. (A) 4, 2, 3, 1
The demographic transition model describes a historical progression through four main stages. It starts with a stable population having high birth and death rates. This is followed by a period of rapid growth as death rates fall, and then a phase where growth slows as birth rates also begin to decline. Finally, the country reaches a stage of low, stable vital.

136. (B) It can improve the productivity of physical assets and lead to economic growth.
Technological development plays a vital role in enhancing capital resources. By introducing new and more efficient machinery, tools, and processes, technology increases the productivity of these physical assets. This means that more goods and services can be produced with the same amount of capital, which is a major driver of economic growth and can lead to higher standards of.

137. (C) Social capital
Human resources can be measured through both quantitative and qualitative aspects. Quantitative measures include the size of the labor force, the economically active population, and the unemployment rate, all of which provide numerical data. In contrast, social capital is a qualitative concept. It refers to the intangible networks, norms, and trust within a society that facilitate cooperation and are not easily.

138. (B) Water scarcity and depletion of aquifers
A growing population creates an increasing demand for fresh water for drinking, sanitation, industry, and agriculture. This rising demand can lead to severe water scarcity, especially in regions with limited water supplies. In many areas, groundwater is being pumped out of aquifers faster than it can be naturally replenished, leading to falling water tables and the eventual depletion of this.

139. (C) Population size and structure are important variables in planning for national development.
Effective national development planning requires a deep understanding of population dynamics. A country's population size, growth rate, and age structure are all critical variables that determine the demand for jobs, education, healthcare, and infrastructure. By incorporating population policies into their development plans, nations acknowledge that demographic trends are not just outcomes of development, but are also key factors that shape.

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140. (C) 1, 2, 3, and 4 only
Rapid population growth has wide-ranging implications for both society and the environment. It increases the pressure on essential resources like food and water and creates a greater demand for public services like housing, education, and health. If the economy cannot create enough jobs for the growing workforce, it can lead to higher unemployment. Furthermore, population growth can exacerbate various environmental problems.

141. (B) Provision of public goods and services
The welfare approach to development is based on the idea that the state has a responsibility to

198. (C) Human resources
The term "economically active population" is a very important concept in the study of human resources. It refers to all the people in a country who are either working or are actively looking for a job. This group represents the total labor supply of a nation. Understanding its size and characteristics is essential for effective economic and social planning.

199. (D) Increased demand leading to overcrowding and growth of slums.
Rapid population growth puts a huge amount of pressure on the housing market, especially in big cities. As the number of people grows, the demand for housing increases rapidly, often leading to a shortage of affordable places to live. This can result in overcrowding and the development of slums, where many people live in poor and unsanitary conditions.

200. (A) Both A and R are true and R is the correct explanation of A.
Julian Simon's optimistic view is based on the idea that human beings are the ultimate resource. He believed that more people provide more minds to discover and invent new and better ways of doing things. In the long run, this ingenuity leads to technological advancement and the creation of more resources, making a larger population a benefit to the.

201. (B) It prioritizes direct government intervention to provide basic needs.
The welfare approach to development is based on the idea that every person has a right to a basic standard of living. It argues that the government has a primary role in ensuring that all citizens have access to essential services like healthcare, education, and social security. This approach prioritizes people's well-being and social equity over just economic growth.

202. (C) Institutions, norms, and behaviors
Social change is a very broad concept that refers to the long-term transformation of a society. It involves fundamental shifts in the way a society is organized, the cultural norms and values that guide people's lives, and the way people behave toward each other. These changes can be driven by many different factors, including technology, economics, and new ideas.

203. (D) Taking urgent action to combat climate change
The Sustainable Development Goals are a much broader and more ambitious set of targets than the older Millennium Development Goals. One of the most important new areas they address is the global environment, including a specific goal for taking urgent action to combat climate change. This reflects a growing global awareness that protecting our planet is essential for all development.

204. (B) Population growth dilutes the stock of capital per worker, hampering productivity.
The pessimistic perspective on population growth often uses the argument that more people means less capital for each worker. If the population grows faster than a country can invest in new tools, machines, and infrastructure, then each worker will have less to work with. This "capital dilution" can lower productivity and make it harder for a country to.

205. (D) 1, 2, 3, and 4
Capital and human resources are both essential for development. Capital resources include man-made tools like machines, while human resources include the people who use them and their skills. Technology plays a vital role in making these resources more productive. Demographic factors like the age of the population can also have a big effect on a country's ability to.

206. (D) Seasonal unemployment
Seasonal unemployment is a common problem in industries that are affected by the time of year. A ski instructor is a perfect example, as there is a high demand for their work in the winter but very little in the summer. This type of unemployment is a natural part of certain jobs and is usually expected by the people.

207. (C) Deforestation
Deforestation is the massive and permanent removal of trees from a forest. This is a very serious environmental problem that is often driven by the need for more land for farming and housing for a growing population. Deforestation leads to the loss of biodiversity, contributes to climate change, and can cause other problems like soil erosion and flooding.

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services. Simultaneously, a shrinking working-age population may lead to a reduced tax base, potentially straining the sustainability of social welfare systems. This demographic shift requires proactive policy adjustments.

151. (D) Human Poverty Index (HPI)
The Human Poverty Index was introduced by the United Nations to provide a more comprehensive view of poverty than just income levels. It measures deprivation by looking at the same three dimensions used in the Human Development Index: a long and healthy life, knowledge, and a decent standard of living. By focusing on these outcomes, it highlights the basic needs that.

152. (A) Ester Boserup
Ester Boserup was a prominent economist who developed an optimistic theory of agricultural change. She argued that population pressure, rather than being a disaster, is actually a primary driver of agricultural intensification. According to Boserup, when a population grows, it forces people to develop new technologies and more intensive ways of farming to get more food from the same amount.

153. (C) Disguised unemployment
Disguised unemployment is a situation where many people are working in an area, but their actual contribution to total production is very low or even zero. This is very common in the agricultural sectors of many developing countries, where many family members work on a small farm even though their labor is not all needed to produce the same crop.

154. (D) The increased concentration of greenhouse gases in the atmosphere.
Global warming is a major environmental challenge caused by the human-induced increase in greenhouse gases, such as carbon dioxide and methane. These gases trap heat in the atmosphere, leading to a gradual rise in the Earth's average temperature. This warming of the planet results in various climate-related problems, including melting glaciers, rising sea levels, and more frequent and severe weather.

155. (D) 1, 2, 3, and 4
The neutralist or revisionist perspective offers a balanced view of the population-development relationship. It rejects simplistic ideas and argues that the effect of population growth depends on the social and economic context of each country. Thinkers like Simon Kuznets emphasized that the link is not automatic and that government policies and strong institutions are critical in determining whether demographic change.

156. (B) The process by which societies recognize environmental problems and take adaptive actions.
"Human perception and adjustment" refers to how societies deal with ecological problems. It starts with people becoming aware of an environmental issue, such as pollution or resource scarcity. Once the problem is recognized, the society then takes steps to adapt, which might include developing new technologies, changing their habits, or passing new laws to protect the environment and restore balance.

157. (D) A guaranteed increase in the quality of services provided.
Rapid population growth puts a huge amount of pressure on public services like schools, healthcare, and housing. As the number of people increases, the demand for these services grows rapidly, often faster than the government can provide them. This can lead to overcrowding and a decrease in the quality of services, rather than any guarantee that the quality will improve.

158. (C) Being dominated by young people to having a larger proportion of working-age adults.
The age structure transition is a key part of the demographic transition. It describes the shift from a young population, with a high proportion of children, to one where a larger share of the population is in the working ages. This transition can create an economic opportunity known as the demographic dividend, provided the country has the right policies to support.

159. (C) Innovation, intensification, and economic progress.
The optimistic perspective on population growth, supported by thinkers like Colin Clark and Ester Boserup, suggests that more people can be a good thing. They argue that the pressure of a growing population can stimulate people to innovate, develop better technologies, and find more

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178. (B) Increases the dependency burden and reduces savings.
From a pessimistic perspective, rapid population growth is seen as a problem because it creates a large number of young dependents. This means that a large part of a family's and a country's income must be spent on immediate needs like food and education, rather than being saved and invested. This lack of savings can slow down a country's economic.

179. (C) Renewable resource sustainably
A forest is a renewable resource because trees can grow back after they are harvested. When timber is taken at a rate that allows the forest to regrow and stay healthy, it is an example of sustainable use. This approach to resource management is a key part of sustainable development, as it ensures that resources are available for both current and.

180. (D) 1, 2, 3, and 4
Unemployment is not just one problem; it comes in many different forms. Frictional unemployment is temporary, seasonal is tied to the time of year, disguised happens when labor is not productive, and chronic is a long-term structural issue. Understanding all of these different types is essential for governments to create the right policies to help people find productive and.

181. (C) Soil salinity
Soil salinity is an environmental problem that occurs when the salt content in the soil becomes too high for most plants to survive. This can happen naturally, but it is often caused or made worse by human activities like improper irrigation. When too much water is used in dry areas, it can bring salts to the surface, eventually turning productive.

182. (B) Frameworks for cooperative action among nations on environmental issues.
International environmental protocols are essential because many environmental problems do not stop at national borders. These agreements provide a way for different countries to work together to solve shared problems like climate change and pollution. They set common goals and help nations coordinate their efforts to protect the global environment for everyone. These frameworks are vital for long-term sustainability.

183. (D) It exclusively measures environmental quality and political freedom.
The Human Development Index is a very useful tool for measuring development, but it does have some limitations. While it gives a good picture of health, education, and standard of living, it does not include measures of environmental quality or political freedom. Other indices have been developed to measure these important areas, as they are also essential parts of.

184. (C) Working-age population (15-64 years).
The demographic dividend is a period when a country has a large and healthy working-age population relative to its children and elderly. This favorable age structure can provide a boost to the economy, as there are more people working and saving and fewer people who need to be supported. This is a potential "gift" that can lead to rapid economic.

185. (B) Optimistic
Colin Clark and Ester Boserup are two of the most important thinkers in the optimistic school of thought on population. They both argued that population growth, instead of being a problem, can actually be a stimulus for progress. Clark focused on the benefits of population density, while Boserup showed how population pressure can lead to agricultural innovation and better technology.

186. (B) A factory building
Capital resources are man-made things that are used to produce other goods and services. A factory building is a classic example of this. Unlike natural resources, which come from the earth, or human resources, which are people and their skills, capital resources are the tools and infrastructure that humans have built to help them produce more efficiently. These are.

187. (C) Reforestation
A growing population puts a lot of pressure on the land, which often leads to negative environmental impacts. These include deforestation to clear land for farming, soil erosion from over-farming, and desertification in dry areas. Reforestation, which is the planting of new trees, is a positive action that can help to repair the damage, rather than being a direct.

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169. (C) Poorly managed irrigation systems in arid regions
Soil salinity is an environmental problem that can occur when irrigation is not managed correctly, especially in dry areas. When too much water is used, the water table can rise, bringing salts to the surface. When the water evaporates, the salt is left behind in the soil, eventually making it too salty for crops to grow. This is a common.

170. (B) P-3, Q-1, R-4, S-2
Global development goals and concepts have changed over time. The Millennium Development Goals were set in 2000, followed by the more universal Sustainable Development Goals in 2015. Sustainable development focuses on meeting current needs without harming future generations. Human-centered development is a shift toward prioritizing human well-being over just economic growth. Together, these frameworks guide international efforts toward a better and.

171. (C) Enhancement of political stability.
Rapid population growth has many significant implications for a nation, including pressure on food, water, housing, and public services. However, it does not necessarily enhance political stability. In fact, if a country cannot provide enough jobs and services for its growing population, it can lead to social unrest and political challenges. Population growth is a complex factor that must be.

172. (B) A complex web of mutually acting factors.
The relationship between population growth, the environment, and development is not simple. Instead, it is a complex web of factors that all affect each other. Changes in the population can affect both development and the environment, while environmental health and the level of development can also influence population trends. Understanding these intricate interrelationships is essential for creating effective and.

173. (B) Pessimistic view of population growth.
The "tragedy of the commons" is a classic argument used to support the pessimistic view of population growth. It suggests that when many individuals use a shared resource, their collective self-interest will eventually lead to the resource being depleted or destroyed. This concept highlights the risks of a growing population overusing common resources like water, forests, and the global atmosphere.

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174. (C) Subsistence agriculture with surplus family labor.
Disguised unemployment is most commonly found in the agricultural sectors of developing countries. It happens when many members of a family work on their small farm, even though the same amount of food could be produced with fewer people. These workers are not really productive, but they appear to be working because they have no other job opportunities available to them.

175. (A) Both A and R are true and R is the correct explanation of A.
The transition from the MDGs to the SDGs was a major step forward for global development. The SDGs are a much more ambitious and comprehensive set of goals that apply to every country in the world. They integrate the three main parts of sustainable development—economic, social, and environmental—and include important new areas like peace and justice that were not in.

176. (B) Funding a vocational training program.
Investment in human capital means spending money to improve the skills, knowledge, and health of the population. A vocational training program is a perfect example of this, as it gives people specific skills that make them more productive and more likely to find a good job. Unlike investing in physical capital like machines, this type of investment focuses on developing human.

177. (B) An increase in the proportion of the population over 60 or 65 years.
Population ageing is a demographic change that happens as a country's fertility rate falls and its citizens live longer. This leads to a larger share of the population being in the older age groups, usually over 60 or 65. This shift has important implications for a country's economy and its social services, as it increases the demand for pensions and.

intensive ways to produce food and goods. In this view, population growth can be a driver.

160. (C) The consumption of a resource faster than it is replenished.
Resource depletion is a serious environmental problem that happens when humans use a resource faster than nature can replace it. This is a major concern for non-renewable resources like fossil fuels and minerals, which can never be replaced. It is also a problem for renewable resources like fresh water and forests if they are not used in a sustainable way.

161. (C) Chronic (or structural) unemployment
Chronic or structural unemployment occurs when there is a long-term mismatch between the jobs available and the skills of the workers. This can happen when an industry declines because of competition or new technology, leaving workers without the right skills for the new jobs being created. This type of unemployment is a serious challenge that often requires long-term retraining programs.

162. (C) Land in arid and semi-arid areas
Desertification is a type of land degradation that occurs in dry, semi-arid, and sub-humid areas. It is caused by various factors, including climate change and human activities like overgrazing and deforestation. In this process, fertile land gradually becomes more desert-like and loses its ability to support plants and animals, making it difficult for the people living there to sustain themselves.

163. (B) The stage where the working-age population grows faster than the dependent population.
The demographic dividend is a potential for economic growth that happens when a country's birth rate falls and its death rate is already low. This creates a period when there are many people in the working ages and relatively few young children or elderly people to support. If these workers are healthy and educated, they can boost the country's economy significantly.

164. (B) That spending on population control yields a higher economic return than conventional investments.
Stephen Enke's investment model is part of the pessimistic literature on population. He used economic analysis to argue that a country could get a much better return on its money by spending it on population control than by investing it in more traditional development projects. His argument was that by lowering the birth rate, a country could improve its living.

165. (A) 1, 2, 3, and 4 only
Historical and modern views on population offer many different perspectives. Mercantilists and Julian Simon were optimistic, while Malthus was pessimistic. Marxists looked at the structure of society to explain poverty. Greek philosophers were more concerned with the stability of their city-states than with simply maximizing their population. Each of these viewpoints has contributed to our understanding of the complex relationship.

166. (B) Human Development Index (HDI)
The Human Development Index is a well-known measure used by the United Nations to rank countries. It combines three key dimensions: a long and healthy life, knowledge, and a decent standard of living. These are measured using data on life expectancy, years of schooling, and gross national income per person. The HDI provides a more complete picture of development.

167. (B) Improve the productivity of physical assets like machinery.
One of the most important roles of technology in economic development is to improve capital resources. By developing new and better ways of doing things, technology makes physical assets like machinery and infrastructure more productive. This allows a country to produce more goods and services with the same amount of resources, which is a key driver of long-term economic.

168. (C) Labour force
The labor force is the total number of people in a country who are either already working or are actively looking for work. This is a very important measure for understanding a country's human resources and its economic potential. People who are not in the labor force include those who are retired, full-time students, or those who are not seeking work.

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188. (A) Human needs are met without damaging the planet's life-support systems.
A sustainable human eco-system is one where humans live in a way that respects the natural limits of the planet. This means that we meet our current needs for food, water, and shelter in a way that does not destroy the ecosystems we depend on. Achieving this kind of balance is the main goal of sustainable development and is essential.

189. (B) An integrated approach aligned with principles of sustainable development.
India's development policies have evolved to recognize that population, development, and the environment are all closely linked. The country's plans now try to integrate these areas, with the goal of achieving sustainable development that improves people's lives while also protecting the natural world. This balanced approach is essential for the long-term well-being of a large and growing nation.

190. (C) 1, 2, 3, and 4 only
There are many different ways to look at the relationship between population and development. Pessimists see population as a problem, optimists see it as a benefit, and neutralists see it as complex. Socialists, on the other hand, focus on the structure of society rather than population numbers. However, it is a mistake to think that Malthus was an optimist.

191. (B) Infant mortality, literacy, life expectancy at age one
The Physical Quality of Life Index is a simple but useful tool for measuring basic well-being in different countries. It uses an average of three important social indicators: the infant mortality rate, the literacy rate, and life expectancy at age one. By focusing on these outcomes, it provides a measure of development that is independent of a country's economic.

192. (B) The networks, norms, and trust that facilitate cooperation.
Social capital is not about money; it's about the relationships between people in a society. It refers to the networks of people, the shared norms of behavior, and the levels of trust that allow people to work together effectively. A society with high social capital is more likely to be able to solve problems and achieve common goals, which.

193. (B) A rapid decline in the death rate.
The transition from the first to the second stage of the demographic transition model is triggered by a significant drop in the death rate. This usually happens because of improvements in public health, better nutrition, and cleaner water. Because the birth rate stays high for a while longer, this drop in the death rate leads to a period of rapid.

194. (C) Pessimistic
The Coale and Hoover study is a very famous example of the pessimistic view on population. They looked at how rapid population growth in developing countries can hinder economic progress. Their main argument was that a growing population of young children makes it harder for a country to save money and invest in the things that lead to long-term growth.

195. (A) P-3, Q-4, R-1, S-2
Unemployment is a complex problem that comes in many different forms. Frictional is temporary between jobs, disguised happens when people are not really productive, seasonal is tied to the time of year, and chronic is a long-term issue. It's very important for students and policymakers to understand all of these different types to help them find the right.

196. (B) Global warming
Global warming is a major environmental issue caused by the human-induced increase in greenhouse gases, such as carbon dioxide and methane. These gases trap heat in the atmosphere, leading to a gradual rise in the Earth's average temperature. This warming of the planet results in various climate-related problems, including melting glaciers, rising sea levels, and more frequent and severe.

197. (B) The 'population problem' is a symptom of the capitalist system of production.
The Marxist perspective offers a unique view of population issues. They argue that the idea of a "population problem" is actually a result of the capitalist system. From this point of view, it is the unequal distribution of resources and the way production is organized that causes poverty and unemployment, not the number of people. A more just society.

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ensure a basic standard of living for all its citizens. It focuses on the direct provision of essential public goods and services, such as healthcare, education, and social security. This approach prioritizes social well-being and equity, believing that government intervention is necessary.

142. (C) Trust and social networks
Social capital is an intangible resource that exists within the relationships among people in a society. Its key components include the levels of trust, shared norms, and the strength of social networks. These elements facilitate cooperation and collective action, making it easier for communities to work together toward common goals. Social capital is increasingly recognized as a vital factor for.

143. (B) Future generations should not have their prospects diminished by the current generation.
The fundamental principle of sustainable development is inter-generational equity. This means that the current generation should meet its needs in a way that does not use up all the resources or damage the environment for those who will come after them. Sustainable development seeks to leave a planet that is healthy and has enough resources for future generations to live well.

144. (D) Increase the death rate, such as famine, disease, and war.
In Malthusian theory, "positive checks" are natural or human-caused factors that limit population growth by increasing the death rate. Malthus believed that if a population grows too large for its food supply, it will inevitably face checks such as famine, widespread disease, and war. These events serve to bring the population back in line with the available resources through a.

145. (A) P-3, Q-4, R-1, S-2
The study of population and resources has been shaped by the contributions of several key figures and studies. Julian Simon is known for viewing population as the ultimate resource, while Ester Boserup focused on agricultural innovation. Coale and Hoover analyzed how population growth can hinder economic development by reducing savings. Garrett Hardin's concept of the "Tragedy of the Commons" illustrates the risk.

146. (B) Non-renewable natural resources
Fossil fuels like petroleum, coal, and natural gas are classic examples of non-renewable natural resources. They were formed over millions of years from the remains of ancient plants and animals. Because they exist in fixed amounts and cannot be replaced once they are consumed, their use leads to eventual depletion. Sustainable development requires a shift away from these finite fuels toward.

147. (A) Labour force and unemployed
A person who is actively looking for their first job after graduating is considered part of the labor force. The labor force includes everyone who is either currently working or is available and looking for work. Since this person does not yet have a job but is actively seeking one, they are specifically classified as being unemployed within the economically active population.

148. (C) Agricultural sector to industrial and service sectors.
As a country develops and its population grows, its employment structure typically undergoes a major shift. People move away from the primary sector, which is mostly agriculture, and into the secondary and tertiary sectors, which include industry and services. This transition is driven by technological progress, urbanization, and the need for more specialized jobs in a modern and growing economy.

149. (C) Land
Land is a vital natural resource that provides the foundation for agriculture and human settlements. Human activities can lead to land degradation through processes like soil erosion, which removes fertile topsoil, and soil salinization, which makes land unproductive. Nutrient loss from over-farming is another form of degradation. These pressures on land resources are often exacerbated by a growing population's.

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150. (A) Both A and R are true and R is the correct explanation of A.
Population ageing creates significant fiscal challenges for modern states due to changing demographic structures. As the proportion of elderly citizens increases, governments must allocate larger shares of the national budget toward pensions and specialized healthcare

208. (A) Human consumption and environmental regeneration processes.
A sustainable human eco-system is achieved when human societies live in a way that respects the natural limits of the environment. This means that we consume resources at a rate that allows the earth to naturally replace them and that we produce waste at a rate that the environment can safely absorb. Achieving this kind of balance is essential.

209. (B) The limits to growth and the need for ecological balance.
By including environmental sustainability in its development plans, India is acknowledging that there are limits to how much we can grow without damaging the natural world. This reflects an understanding of the need for ecological balance and the importance of protecting the environment for the long-term well-being of the population. This is a key part of sustainable.

210. (C) Gender Inequality Index (GII)
The Gender Inequality Index is an important tool used by the United Nations to measure the disadvantages faced by women and girls. It looks at three main areas: reproductive health, empowerment, and participation in the labor market. A higher GII score shows that there is a higher level of inequality between men and women in that country, which.

211. (C) Population pressure is a major cause of agricultural innovation and intensification.
Ester Boserup's work provided an optimistic challenge to the pessimistic views on population. Her core argument was that population growth is not a disaster, but a stimulus for progress. She showed that as population pressure increases, people are forced to find new and more intensive ways of farming, leading to technological change and better agricultural systems. Her work is.

212. (B) The overall level of economic activity and production.
The demand for labor in a country is determined by the firms and organizations that need workers to produce goods and services. This demand is most strongly influenced by the overall health of the economy. When an economy is growing and production is high, there is a greater need for workers. This is separate from the supply of labor.

213. (B) Urban sprawl
Urban sprawl is a common consequence of population growth and urbanization. It refers to the rapid and often unplanned expansion of cities into the surrounding countryside. This process can lead to the loss of agricultural land, increased traffic and pollution, and higher costs for providing public services. Managing urban sprawl is a major challenge for many growing cities around.

214. (C) There is no single relationship between population and development.
The neutralist or revisionist perspective, associated with thinkers like Simon Kuznets, offers a nuanced view of the population-development link. Instead of seeing population growth as always good or always bad, they argue that the relationship is complex and context-dependent. This means that demographic changes can have different effects in different countries, depending on their policies, institutions, and overall.

215. (D) 1, 2, 3, 4, and 5
Environmental degradation is a broad term that covers many different problems, all of which are made worse by a growing population. These include air pollution, the enhanced greenhouse effect, deforestation, soil erosion, and soil salinity. Each of these problems is closely linked to the others, and they all contribute to the overall decline in the health of our planet.

216. (C) Environmental quality
The Human Development Index is a very useful measure of development, but it does have some limitations. While it gives a good picture of health, education, and standard of living, it does not include measures of environmental quality or political freedom. Other indices have been developed to measure these important areas, as they are also essential parts of.

217. (B) Demographic dividend
The demographic dividend is a potential economic benefit that happens when a country's age structure shifts toward a larger share of working-age adults. This favorable change is usually triggered by a drop in the birth rate. If these workers are healthy and educated, they can boost the economy significantly. However,

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basic level of survival. Escaping this trap is a key part of the modern development.

237. (B) Soil erosion
Soil erosion is an environmental problem that occurs when the fertile topsoil is removed by wind or water. While it happens naturally, it is often made much worse by human activities like deforestation and over-farming. When the topsoil is lost, the land loses its ability to grow crops and store water, which can have serious consequences for.

238. (A) Human activities integrate with ecological processes safely.
Sustainable human eco-systems are achieved when human societies live in a way that respects the natural limits of the environment. This means that we meet our current needs for food, water, and shelter in a way that does not destroy the ecosystems we depend on. Achieving this kind of balance is the main goal of sustainable development and is.

239. (C) Part of the natural process of job turnover in a dynamic economy.
Frictional unemployment is different from other types because it is generally short-term and is considered a natural part of a healthy economy. It happens when people are simply between jobs, whether they have left one job to look for a better one or are just entering the workforce for the first time. It is a sign of a mobile.

240. (B) 1, 3, 4, and 5 only
Sustainable development and the global goals that support it are essential for a better future. The concept of sustainable development balances economic, social, and environmental needs, and the SDGs provide a universal roadmap for achieving this. While the MDGs were more focused on developing countries, both frameworks agree on the importance of environmental sustainability for long-term well-being.

241. (C) Demographic transition
The demographic transition is the historical shift from a state of high birth and death rates to a state of low birth and death rates. This transition is usually associated with economic and social development. Most countries have moved or are moving through several distinct stages of this transition, which fundamentally changes the size and age structure of their populations.

242. (C) The mode of production and class structure
Socialist and Marxist perspectives offer a systemic critique of society, arguing that social problems like poverty are caused by the way production is organized and by class inequality. From this point of view, it is the capitalist system, not population growth, that is the root cause of poverty. They believe that a more just society would be able.

243. (B) The secondary (industry) and tertiary (services) sectors.
As a country develops and its population grows, its employment structure usually undergoes a long-term shift. People move away from the primary sector, which is mostly agriculture, and into the secondary and tertiary sectors, which include industry and services. This transition is driven by technological progress, urbanization, and the need for more specialized jobs in a modern economy.

244. (B) Deforestation
A growing population puts a lot of pressure on the land, which often leads to negative environmental impacts. Deforestation to clear land for farming is a very common consequence of population growth. This large-scale removal of trees leads to the loss of biodiversity, contributes to climate change, and can cause other problems like soil erosion and flooding. Protecting our.

245. (B) 1, 2, 3, 4
Global indicators and goals have evolved over time. The Physical Quality of Life Index was developed in the 1970s, followed by the Human Development Index in 1990. In 2000, the Millennium Development Goals were set to target poverty. Finally, in 2015, the Sustainable Development Goals were established as a more comprehensive and universal framework for future global progress.

246. (C) That societies can recognize threats and develop adaptive strategies.
"Human perception and adjustment" refers to how societies deal with ecological problems. It starts with people becoming aware of an environmental issue, such as pollution or

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nutrition, sanitation, and healthcare. Because the birth rate stays high for a while longer, this drop in the death rate leads to a population explosion.

228. (C) Julian Simon
Julian Simon is the thinker most associated with the optimistic idea that population is the "ultimate resource." He argued that humans are unique because their ingenuity can solve problems and create new resources. In his view, having more people means having more minds to innovate, which leads to technological progress and a better quality of life for everyone in.

229. (B) The economic returns of spending on health and education.
While both the welfare approach and the human capital approach focus on social spending, they have different justifications. The welfare approach sees these services as a basic right, while the human capital approach emphasizes their economic benefits. It argues that spending on health and education is an investment that creates a more productive workforce, leading to faster economic.

230. (D) 1, 2, 3, and 4
The optimistic perspective on population growth is supported by several important thinkers. They all believe that more people can lead to better outcomes. Colin Clark focused on the benefits of population density, Ester Boserup on agricultural innovation, and Julian Simon on human ingenuity. Together, their work provides a powerful challenge to the more pessimistic views on demographic change.

231. (B) The interactions between human social systems and their context.
The term "human eco-system" is used to emphasize that human societies are not separate from the natural world. It describes the complex set of interactions between human social, political, and economic systems and the biological and physical environment in which they exist. Understanding these interactions is essential for creating development that is both socially just and environmentally sustainable.

232. (C) An international agreement or treaty on a specific issue.
An international protocol is a formal agreement between different countries. These protocols are essential for addressing global problems like climate change and pollution that no single country can solve alone. They provide a structured way for nations to work together, set common goals, and coordinate their efforts to protect the world's environment for everyone. These frameworks are.

233. (B) Both the supply of the resource and the human demand.
Resource scarcity is not just about how much of a resource exists; it's also about how much people want it. A resource can be scarce because its supply is physically limited or because the demand for it has grown rapidly. Therefore, scarcity is a relative concept that depends on the balance between supply and demand and is influenced.

234. (C) A greater overall demand for energy resources.
Population growth directly increases a country's total need for energy. As more people need electricity for their homes, fuel for transportation, and energy for industry and agriculture, the total demand for all types of energy resources grows. This rising demand puts significant pressure on the energy sector and makes it essential to use energy more efficiently and develop.

235. (B) Investment in human capital.
When a government spends money on programs like adult literacy and public health, it is investing in human capital. These programs improve the skills, knowledge, and health of the people, making them more productive and better able to contribute to the country's economy. This type of investment is a key driver of long-term development and improves people's lives.

236. (C) Population gains absorb food supply, preventing living standards rise.
The Malthusian trap describes a situation where any improvements in technology or food production are quickly offset by a growing population. This means that even if the total amount of food increases, the amount for each person stays the same, keeping everyone at a

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272. (B) the working-age population is proportionally large, offering potential for economic growth.
The demographic dividend represents a unique period during which the working-age population is proportionally larger than the dependent population of children and elderly. This favorable age structure creates a potential for accelerated economic growth due to an expanded labor force. However, realizing this benefit requires strategic investments in human capital and the creation of enough productive employment opportunities.

273. (D) Improvements in healthcare, sanitation, and nutrition leading to lower mortality.
The initial stage of the demographic transition is primarily triggered by advancements in public health, nutrition, and sanitation. These improvements lead to a significant fall in mortality rates, particularly among infants and children. As a result, the population begins to grow more rapidly before cultural and economic factors eventually cause a subsequent decline in birth rates over time.

274. (A) low fertility rates combined with longer life expectancy.
Population ageing occurs as a direct result of successfully completing the demographic transition. This phase is characterized by sustained low fertility rates and a significant increase in life expectancy. As people live longer and fewer children are born, the age structure of the population shifts, resulting in a higher proportion of elderly individuals and presenting new socioeconomic and healthcare challenges.

275. (C) invest in human capital and create sufficient employment opportunities.
Successfully harnessing the demographic dividend is not an automatic process for developing nations. It requires proactive government policies that focus on investing in human capital through education and health services. Furthermore, the economy must be capable of providing sufficient employment for the growing labor force. Without these conditions, the potential for rapid growth offered by a large workforce remains unrealized.

276. (A) Mercantilist views.
Mercantilist thought during the early modern period emphasized the importance of a large population for state power. Thinkers in this tradition explicitly linked population growth to an increased labor supply and national wealth. A robust and growing citizenry was seen as essential for building military strength and ensuring the country could compete effectively in global economic and territorial expansion.

277. (D) They attributed problems like poverty to inequitable resource distribution, not population size.
Socialist and Marxist perspectives differed from traditional pro-natalist views by focusing on structural economic issues rather than population size. They argued that social problems like poverty and unemployment were rooted in the inequitable distribution of resources under capitalism. From this viewpoint, a large population is not a problem itself but can be productively organized within a more equitable social system.

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278. (B) a concern for balancing population with available land and resources.
The writings of the philosopher Confucius address the concept of an optimum population size. This view emphasizes the necessity of balancing the number of people with the availability of land and natural resources. Maintaining this equilibrium is seen as vital for ensuring social order, stability, and the general well-being of the population within a sustainable and harmonious societal structure.

279. (C) all considered population size in relation to state or economic objectives.
Greek philosophers, Mercantilists, and Physiocrats all shared a perspective that linked population size to specific state or economic objectives. Whether focused on city-state defense, national wealth, or agricultural surplus, these traditions considered the number of citizens as a crucial variable for achieving political and economic goals. Consequently, population was viewed as a resource to be managed for collective success.

280. (D) A government program providing incentives for families to have more children.
A pro-natalist argument for prosperity supports policies that encourage population growth to enhance national strength. In this context, a government might implement programs

resource scarcity. Once the problem is recognized, the society then takes steps to adapt, which might include developing new technologies, changing their habits, or passing new laws to protect the environment and restore balance.

247. (C) Is mediated by factors like technology, institutions, and policies.
The neutralist or revisionist perspective offers a nuanced view of the population-development link. Instead of seeing population growth as always good or always bad, they argue that the relationship is complex and context-dependent. This means that demographic changes can have different effects in different countries, depending on their policies, institutions, and overall quality of their national governance systems.

248. (C) Population growth.
Rapid population growth puts a huge amount of pressure on public services like housing, sanitation, and education. As the number of people increases, the demand for these essential services grows rapidly, often faster than the government can provide them. Managing this demand is a major challenge for many growing nations as they work to improve the quality of life.

249. (B) Cyclical
Unemployment is a complex problem that comes in many different forms. Frictional is temporary between jobs, disguised happens when labor is not productive, and chronic is a long-term structural issue. While cyclical unemployment is caused by downturns in the economy, it is not one of the specific types often discussed in the context of these academic population and development.

250. (A) Both A and R are true and R is the correct explanation of A.
Population ageing creates significant fiscal challenges for modern states due to changing demographic structures. As the proportion of elderly citizens increases, governments must allocate larger shares of the national budget toward pensions and specialized healthcare services. Simultaneously, a shrinking working-age population may lead to a reduced tax base, potentially straining the sustainability of social welfare systems. This demographic shift requires.

251. (B) Its failure to account for the multi-dimensional aspects of human well-being.
Economic indicators like per capita income focus strictly on wealth averages. This limited perspective fails to address the multi-dimensional aspects of human well-being, such as health and education. Furthermore, such metrics often hide internal inequalities in wealth distribution and do not reflect personal freedoms or essential service access, necessitating more holistic paradigms for measuring national progress.

252. (A) a fundamental investment for enhancing future productivity.
Modern human capital paradigms reframe spending on health and education as a strategic investment. This approach suggests that such expenditures are not merely forms of consumption but are vital for boosting future productivity. By enhancing the skills and physical capabilities of individuals, nations can secure long-term economic progress through a more efficient and capable workforce.

253. (C) By moving from a purely economic metric to a more holistic, human-centered assessment.
Composite indices like the Human Development Index and Physical Quality of Life Index provide a nuanced view of progress. These tools shift the focus from purely economic growth toward human-centered outcomes. By integrating data on life expectancy, literacy, and infant mortality, they acknowledge that true national development involves enhancing the lives and freedoms of citizens holistically.

254. (D) it has significant inequality and poor outcomes in health and education.
A high per capita income does not automatically guarantee high development levels because it represents an average value. If a nation suffers from extreme wealth inequality or exhibits poor outcomes in public health and education systems, its overall performance in human development will remain low. Consequently, economic prosperity must be coupled with social well-being to improve index rankings.

255. (C) Development is contingent on the state's active role in providing public services.
The welfare approach to development centers on the proactive role of the state in supporting

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its citizens. It posits that a government must prioritize the direct provision of essential public services to enhance human well-being. By focusing on accessibility to health, education, and social safety nets, this paradigm views development as a result of institutional support mechanisms.

256. (B) Achieving planned social change to enhance population welfare alongside economic progress.
Social development is defined as a process of planned change that seeks to elevate the welfare of an entire population. This objective is pursued in tandem with economic growth to ensure progress is comprehensive. It emphasizes strengthening civil society and empowering local communities, fostering a dynamic environment where structural and institutional changes align with broader social benefits.

257. (D) the networks, norms, and trust that enable cooperation.
Social capital represents a vital sociological concept involving the networks, shared norms, and trust within a society. These elements are crucial for facilitating effective coordination and cooperation among individuals for their mutual benefit. High levels of this resource are considered essential for promoting positive social change and strengthening the overall fabric of institutional and communal life.

258. (A) It assesses gender-based disparities in health, knowledge, and living standards.
The Gender Development Index serves as a specialized tool for assessing human development through the lens of gender equality. It specifically quantifies disparities between men and women across dimensions of health, knowledge acquisition, and living standards. By highlighting these gaps, the index provides critical data for addressing systemic inequalities and promoting more inclusive progress within a nation.

259. (C) They provided a global framework that institutionalized targets for social progress.
The Millennium Development Goals played a transformative role by establishing a global framework for social progress. These goals introduced time-bound, measurable targets to address extreme poverty, education gaps, and health crises. By institutionalizing these objectives on the international stage, they shifted the development agenda toward human-centric results and encouraged cooperation between nations to achieve common welfare targets.

260. (A) difficulties in facilitating cooperation for mutual benefit.
In societies characterized by low social capital, there is a fundamental lack of trust and shared norms among citizens. This deficiency creates significant barriers to facilitating cooperation for mutual benefit or collective action. Without strong social networks, communities often struggle to coordinate effectively, which hinders the ability to drive positive social change or implement collaborative development initiatives.

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261. (D) Meeting present needs without jeopardizing the ability of future generations to meet theirs.
Sustainable development is a forward-thinking paradigm that emphasizes the preservation of resources for the future. It asserts that current human needs must be met without compromising the ability of subsequent generations to fulfill their own requirements. This approach balances social, economic, and environmental objectives, advocating for a development pathway that acknowledges and respects the inherent limits of nature.

262. (B) The SDGs are universally applicable to all countries, whereas the MDGs targeted developing nations.
The Sustainable Development Goals differ from earlier frameworks by adopting a universal application for all nations, regardless of wealth. While the Millennium Development Goals primarily targeted issues within developing countries, the current agenda involves a comprehensive set of interconnected goals for everyone. This shift recognizes that environmental, social, and economic challenges are global responsibilities that require collective action.

263. (C) The pursuit of development that prioritizes economic growth above all else.
Sustainable development fundamentally challenges the traditional mindset that prioritizes rapid economic growth above all other considerations. It rejects the growth-at-all-costs mentality by insisting that environmental

and social factors are equally critical for long-term prosperity. This perspective advocates for a balanced approach where economic progress is achieved within ecological limits, ensuring that development is both genuine and lasting.

264. (D) The goals address a wide array of interlinked issues like poverty, health, and climate change.
The integrated nature of the Sustainable Development Goals reflects the understanding that global challenges are deeply intertwined. Poverty, health, and climate change cannot be effectively addressed in isolation from one another. Instead, these goals represent a holistic framework where progress in one area is linked to success in others, necessitating a comprehensive strategy to achieve overall societal well-being.

265. (A) economic activities should be conducted within the regenerative capacity of the environment.
Respecting ecological limits is a core tenet of the sustainable development paradigm, suggesting that economic activities must remain within environmental capacities. This means that resource consumption and waste production should not exceed the regenerative and absorptive power of nature. Acknowledging these boundaries ensures that development does not lead to irreparable environmental degradation, thereby protecting the planet's future.

266. (B) Poverty is a multidimensional phenomenon involving various deprivations.
Defining poverty solely through income ignores the complex reality of human deprivation. Poverty is now understood as a multi-dimensional phenomenon that includes a lack of access to education, healthcare, and fundamental opportunities. By looking beyond financial metrics, researchers can better identify various forms of suffering and develop more effective policies aimed at eradicating the diverse barriers to well-being.

267. (B) It concentrates specifically on deprivations rather than average achievements.
The Human Poverty Index is unique because it focuses on the backlog of deprivations rather than average national achievements. While other indices might celebrate growth, this index measures the distribution of progress by identifying where basic human capabilities are still missing. This concentration on the lack of essential services provides a distinct perspective for targeting interventions toward the most vulnerable.

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268. (A) The deprivation in knowledge, measured by illiteracy.
The calculation of the Human Poverty Index incorporates the dimension of knowledge as a critical factor in human well-being. This specific deprivation is measured through adult illiteracy rates, reflecting a lack of basic human capability. By including this metric, the index highlights how the inability to access education prevents individuals from participating fully in society or reaching their potential.

269. (C) provide a more nuanced understanding of poverty based on capability deprivation.
The primary purpose of the Human Poverty Index is to offer a comprehensive understanding of poverty based on capability deprivation. It moves the focus away from monetary lack to highlight a deficit in fundamental life opportunities, such as longevity and literacy. This tool assists policymakers in identifying specific areas where a population is falling behind, enabling more targeted and effective interventions.

270. (D) there are significant portions of the population with low life expectancy and literacy.
A country might exhibit low income poverty but a high Human Poverty Index if it has significant deficits in human capabilities. High levels of illiteracy or low life expectancy among certain segments of the population indicate that wealth is not translating into improved life outcomes. This discrepancy underscores the importance of measuring deprivation in health and education alongside economic metrics.

271. (C) Death rates decline first, followed by a decline in birth rates.
The demographic transition model outlines a specific sequence of population changes as a nation develops. Initially, improvements in sanitation and medicine lead to a decline in mortality rates. Only after a certain lag do fertility rates begin to drop. This predictable pattern shifts the population structure from a state of high turnover to one of lower birth and death rates.

this "dividend" is not automatic and requires the right.

218. (A) An asset for military and economic power.
The Mercantilist view, which was popular in early modern Europe, saw population as a source of strength. They believed that a large and growing population provided a steady supply of workers and soldiers, both of which were essential for increasing a country's military and economic power. This pro-natalist view influenced the policies of many European states for several.

219. (C) Natural gas
Natural gas is a classic example of a non-renewable natural resource. It was formed over millions of years from the remains of ancient organisms. Because it exists in finite amounts and cannot be replaced once it is used, its consumption leads to eventual depletion. Sustainable development requires a shift away from fossil fuels like natural gas toward renewable energy.

220. (B) P-3, Q-4, R-1, S-2
Different development indices use different indicators to measure progress and deprivation. The HDI focuses on health, education, and income, while the PQLI looks at basic outcomes like literacy and infant mortality. The HPI measures deprivation, and the GDI adjusts for gender inequality. Understanding these different tools is essential for getting a complete picture of development in any country.

221. (B) The population's size and age structure.
The supply of labor in a country is determined by the number of people who are available and willing to work. This is most directly affected by the size of the total population and its age structure, which determines how many people are in the working-age group. Other factors like participation rates and migration also play a role in.

222. (C) Eutrophication of a lake due to fertilizer runoff.
An ecological imbalance happens when the natural balance of an ecosystem is disrupted. While some imbalances are natural, many are caused by human activities. Eutrophication is a prime example. It happens when excess nutrients from fertilizer runoff enter a lake, causing an explosion of algae that uses up all the oxygen and kills other aquatic life. This is a.

223. (B) The pessimistic perspective
The "Limits to Growth" study is one of the most famous examples of the pessimistic view on growth. It used computer simulations to argue that exponential growth in population and industrialization would eventually lead to a collapse of the Earth's systems because the planet's resources are finite. This study raised important questions about the long-term sustainability of our current.

224. (C) Long-term and persistent.
Chronic unemployment refers to joblessness that is long-term and persistent, typically lasting for a year or more. It is often caused by deep-seated structural issues in the economy, such as the decline of a major industry or a significant mismatch between worker skills and the needs of employers. This is a very serious type of unemployment that is.

225. (A) Both A and R are true and R is the correct explanation of A.
The relationship between population, development, and the environment is very complex and moves in both directions. Development can affect population trends and environmental health, while the size and growth of the population and the state of the natural world can also influence the success of development efforts. Understanding these mutual interactions is essential for achieving long-term sustainability.

226. (B) Inter-personal safety and civic activation
The Social Development Index is designed to measure progress in areas that are not captured by economic metrics. It focuses on the well-being of the population and the health of social structures. This includes measures of inter-personal safety, civic engagement, and social inclusion. By prioritizing these human dimensions, the SDI provides a more comprehensive view of how well.

227. (A) Death rate
In the demographic transition model, the shift from a stable population to a rapidly growing one is always triggered by a fall in the death rate. This is usually due to basic improvements in

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providing financial or social incentives for families to have more children. Such initiatives are based on the belief that a larger workforce and consumer base will ultimately lead to increased economic output and a more powerful nation.

281. (A) Population growth tends to outstrip the growth of the food supply.
Thomas Malthus proposed that population growth naturally tends to outpace the expansion of the food supply. His theory posits that while the human population increases at a geometrical rate, food production only grows at an arithmetical rate. This imbalance leads to inevitable checks on population growth, such as poverty and famine, as the available resources become insufficient for the people.

282. (B) diverts resources away from productive investments and towards social overhead.
The Coale and Hoover study reinforced pessimistic views by analyzing the economic impact of high fertility. It argued that rapid population growth in developing nations forces governments to divert scarce resources away from productive industrial investments. Instead, these funds are consumed by social overhead costs, such as basic education and healthcare for a growing youth population, which slows overall economic development.

283. (B) The depletion of unregulated common resources through individual self-interest.
The Tragedy of the Commons describes the depletion of shared, unregulated resources when individuals act in their own self-interest. This problem is significantly intensified by population growth, as more people place greater pressure on limited natural resources. Without collective management or regulation, the cumulative impact of individual consumption leads to the exhaustion of the common good, threatening long-term environmental sustainability.

284. (A) By calculating the cost of an additional birth and framing family planning as a productive investment.
Enke's investment model provides an economic rationale for population control by treating family planning as a productive investment. By calculating the high financial cost associated with each additional birth, the model frames population reduction as more cost-effective than traditional development projects. This perspective suggests that spending on birth control can yield higher economic returns by reducing future social and economic burdens.

285. (C) the negative consequences of unchecked exponential population growth.
A unifying theme among various pessimistic perspectives is the profound concern over unchecked exponential population growth. Whether through the lens of Malthusian famine, diverted investments, or resource depletion, these views suggest that rapid expansion leads to negative consequences. They share the belief that such growth eventually threatens global systems and social stability, necessitating deliberate interventions to ensure sustainable human progress.

286. (D) It is a catalyst for innovation and economic development.
From an optimistic perspective, population growth is viewed as a vital catalyst for innovation and economic development. Rather than being a burden, a larger population is seen as a source of human ingenuity that drives progress. This viewpoint suggests that the pressures created by more people encourage societies to develop new technologies and more efficient systems, ultimately leading to greater prosperity.

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287. (C) pressure created by a growing population.
Ester Boserup's theory posits that technological change in agriculture is a response to the pressures created by a growing population. She argues that as population density increases, societies are forced to innovate and adopt more intensive farming techniques to increase food output. In this model, necessity acts as the primary driver for agricultural advancement, transforming challenges into opportunities for growth.

288. (B) a larger population creates a greater pool of innovators and problem-solvers.
Julian Simon's description of humans as the ultimate resource emphasizes that a larger population expands the pool of potential innovators. He argued that more people lead to a greater number of problem-solvers, scientists, and entrepreneurs who drive technological advancement. This human ingenuity creates new ways to manage resources and generate

wealth, often exceeding the costs associated with supporting a larger population.

289. (D) stimulates innovation, particularly within the agricultural sector.
Colin Clark and Ester Boserup both focused on how population pressure acts as a spur for innovation, specifically within the agricultural sector. They argued that increasing population density forces a shift from extensive to more productive, intensive farming methods. This transition is viewed as a necessary developmental step where societal needs drive the adoption of new technologies and more efficient production systems.

290. (A) a temporary issue that will be solved by human ingenuity and new technology.
Julian Simon's optimistic view suggests that resource scarcity is a temporary challenge that human ingenuity can overcome. He believed that rising demands prompt the development of new technologies, alternative resources, and more efficient practices. From this perspective, the pressure of limited resources is not an insurmountable barrier but a signal for innovators to create solutions that ultimately expand human productive capacity.

291. (C) The relationship between population and development is complex and context-dependent.
The neutralist or revisionist perspective asserts that the relationship between population growth and economic development is complex and highly context-dependent. It rejects the idea that population changes have a universally positive or negative impact. Instead, this school of thought emphasizes that the actual effects are mediated by a variety of social, economic, and institutional factors unique to each specific country.

292. (A) The prevailing institutional and policy environment.
The revisionist perspective highlights that the economic consequences of demographic changes are determined by the prevailing institutional and policy environment. For instance, whether a large youth population becomes a benefit or a burden depends on national policies regarding education, health, and labor markets. Therefore, the impact of population change is not inherent but is shaped by the quality of governance.

293. (D) little empirical evidence for a strong, universal relationship in either direction.
Simon Kuznets is associated with the neutralist view because his empirical research found no consistent or strong relationship between population growth and economic progress. His findings suggested that the claims made by both extreme pessimists and extreme optimists were often inconclusive when tested against historical data. This work underscores the need for a more nuanced understanding of the factors driving development.

294. (B) As a potential benefit that can only be realized through appropriate policies.
Revisionists view the demographic dividend as a potential economic benefit that is not automatically guaranteed by a changing age structure. To realize this advantage, a nation must implement appropriate policies in areas like education, health, and trade. Without the right framework to support and utilize the expanded working-age population, the demographic shift may fail to produce significant economic growth or development.

295. (C) analyze how population changes interact with specific national policies and institutions.
The neutralist school advises policymakers to look beyond simple population trends and analyze how they interact with specific national institutions. Rather than focusing on universal growth or reduction targets, the recommendation is to craft policies that align demographic changes with economic goals. This involves creating a supportive environment in health, education, and labor markets to maximize the benefits of population shifts.

296. (D) Frictional unemployment
Frictional unemployment refers to the short-term joblessness that occurs when workers are in the process of moving between jobs. This type of unemployment is considered a natural and necessary part of a dynamic economy, reflecting individuals searching for better opportunities or relocating. It is typically temporary and signifies that the labor market is flexible enough to allow for worker transitions.

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297. (A) more workers are engaged in a task than is necessary, with near-zero marginal productivity.
Disguised unemployment is a specific phenomenon where more workers are engaged in a task than are technically required for its completion. In such cases, the marginal productivity of additional workers is zero or near zero, meaning total output would not decrease if they were removed. This situation is frequently observed in agrarian economies where family labor is abundant but land is limited.

298. (B) both employed individuals and those who are unemployed but actively seeking work.
The labor force, also known as the economically active population, includes individuals of working age who are either currently employed or actively seeking work. This definition excludes those who are not looking for employment, such as retirees or children. It serves as a key indicator for understanding the size of the productive workforce and the extent of unemployment within a given economy.

299. (B) A shift of labor from agriculture to the industry and services sectors.
The process of economic development typically transforms the structure of employment by shifting labor across different sectors. As a country progresses, there is a characteristic movement of workers from the primary agricultural sector into the secondary industrial and tertiary services sectors. This transition reflects technological advancements and a diversification of the economy, leading to higher levels of urbanization and specialized work.

300. (A) seasonal unemployment.
Seasonal unemployment occurs in industries that experience periodic cycles of high and low activity throughout the year. For example, a ski resort requires many employees during the winter months but significantly fewer during the summer off-season. This type of joblessness is predictable and linked to the specific timing of demand within certain sectors like tourism, agriculture, or holiday-related businesses.

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and the effect.

14. In the context of gender and economic development, what does 'entitlements' refer to?
(A) The universal right to participate and vote in local and national democratic elections.
(B) The traditional inheritance of titles, land, and positions within a royal family.
(C) The mandatory requirement for adult men to serve in national civil services.
(D) The legal and social rights to access and use resources, such as food, education, and healthcare.

15. Match the issues in List I with the gender dimensions in List II and choose the correct option.
List I: (Issue)
P. Inheritance laws
Q. Wage differentials
R. Maternity benefits
S. Informal sector
List II: (Gender Dimension)
1. Disparity in pay between men and women for similar work.
2. Legal framework governing the transfer of property, often favoring male heirs.
3. Employment protection and benefits for women during pregnancy and childbirth.
4. A large segment of the economy where women's work is often unregulated and unprotected.
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-1, R-3, S-4
(C) P-4, Q-3, R-1, S-2
(D) P-2, Q-3, R-4, S-1

16. Which of the following pairs correctly links a men's health risk factor with its description?
(A) Masculinity : A biological trait leading to better health outcomes.
(B) Tobacco and drug consumption : Risk factors often linked to social pressures on men.
(C) Alcoholism : A major risk factor primarily affecting women's health.
(D) Accident : A risk factor completely independent of gendered behavior.

17. Consider the following statements and choose the correct option.
Statement I: The process of globalization has uniformly benefited women by creating new employment opportunities.
Statement II: Globalization can also lead to the marginalization and vulnerability of women, particularly in low-skilled, informal sectors.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

18. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): Measuring women's work is complex, especially in developing economies.
Reason (R): A significant portion of women's labor, such as unpaid domestic work and subsistence farming, is not captured in conventional economic statistics.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

19. What is meant by 'gender divisions in urban labor markets'?
(A) The geographical separation of male and female workers' residences in a city.
(B) The difference in commuting times for men and women.
(C) The segregation of jobs, where certain occupations are considered 'male' and others 'female'.
(D) The equal distribution of all jobs between men and women.

20. Consider the following statements regarding the gender dimension of economic development:
1. Women's access to economic resources is a key indicator of development.
2. Inheritance laws in many societies are gender-neutral and provide equal rights.
3. Wage differentials between men and women for the same work do not exist.
4. Profiling women's work helps in making their economic contribution visible.
5. Maternity benefits are a crucial aspect of ensuring women's participation in the

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(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

7. Which of the following is considered a major health problem predominantly experienced by women in the developing world?
(A) Prostate cancer and associated ailments.
(B) Accidents related to high-risk industrial occupations.
(C) Chronic alcohol-related liver cirrhosis and disease.
(D) Complications from pregnancy and childbirth.

8. A policy that provides subsidized iron and folic acid supplements to pregnant women is directly addressing which gender-related issue?
(A) The major morbidity and mortality burden on women.
(B) The systemic gender wage differentials in formal sectors.
(C) Improving men's access to reproductive healthcare services.
(D) Strengthening women's legal access to land ownership.

9. Consider the following statements regarding the sex ratio at birth:
1. It is typically biologically expected to be around 105 male births per 100 female births.
2. Social and cultural factors have no impact on the observed sex ratio at birth.
3. The use of sex-selective technologies can significantly alter the sex ratio at birth.
4. An abnormally high sex ratio at birth often indicates a societal preference for male children.

Which of the above statements are correct?
(A) 1 and 2 only
(B) 2, 3 and 4 only
(C) 1, 3 and 4 only
(D) 1, 2 and 3 only

10. Which of the following statements about differentials in contraceptive use is INCORRECT?
(A) Male sterilization (vasectomy) is more popular and widely used than female sterilization (tubectomy) in India.
(B) Globally, female-controlled contraceptive methods are more widely used than male-controlled methods.
(C) The burden of contraception often falls disproportionately on women.
(D) Access to and knowledge of different contraceptive methods can vary significantly between men and women.

11. What is the most significant health and nutrition issue specifically faced by adolescent girls in many developing countries?
(A) Early onset of hereditary male-pattern baldness and hair loss.
(B) Health issues related to excessive and long-term tobacco consumption.
(C) High rates of cardiovascular disease within geriatric populations.
(D) Iron-deficiency anemia due to menstruation and poor diet.

12. Arrange the following life events for an adolescent in a typical developmental sequence.
1. Sexual debut
2. Puberty
3. Adolescent pregnancy
4. Marriage

Choose the most logical chronological order.
(A) 2, 1, 3, 4
(B) 1, 2, 3, 4
(C) 2, 3, 1, 4
(D) 4, 2, 1, 3

13. Consider the relationship between the cause and the effect provided below and choose the correct option.
Cause: The social construction of 'masculinity' often encourages risk-taking behaviors.
Effect: Men may experience higher rates of mortality from accidents and lifestyle-related diseases.
(A) The cause is a direct and sole reason for the effect.
(B) The effect is a cause, and the cause is an effect.
(C) The cause is a significant contributing factor to the effect.
(D) There is no relationship between the cause

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43. Which of the following is an INCORRECT statement regarding reproductive health?
(A) Reproductive health concerns both women and men.
(B) Differentials exist in the use of male and female methods of contraception.
(C) Unsafe abortion is a major component of women's reproductive health issues.
(D) The reproductive health of men is not a relevant topic in the developing world.

44. A community health program that conducts awareness sessions for men about their role in family planning and contraception is an example of addressing:
(A) Women's access to land ownership.
(B) The reproductive health of men.
(C) The growth of the Scheduled Tribe population.
(D) Gender mainstreaming in agriculture.

45. Consider the following statements regarding health and nutrition issues of adolescent boys and girls:
1. Both boys and girls face unique health challenges during adolescence.
2. Puberty is a biological process with no social or psychological dimensions.
3. Issues like abuse and maltreatment can have long-term health consequences for adolescents.
4. Adolescent pregnancy is a concern that affects the health and future of young girls.

Which of the above statements are correct?
(A) 1 and 2 only
(B) 1, 3 and 4 only
(C) 2 and 3 only
(D) All are correct

46. Under which major topic is 'sexual debut' typically considered?
(A) Economic development and women's access to credit.
(B) Development plans for the physically challenged.
(C) Gender mainstreaming in the workplace.
(D) Health and nutrition issues of adolescents.

47. What is meant by 'profiling women's work'?
(A) Systematically identifying, categorizing, and valuing the diverse types of work women do, including unpaid labor.
(B) Creating a public social media profile for female individuals who are currently employed in the workforce.
(C) Implementing a restrictive labor policy that limits women to certain pre-defined and traditional job profiles.
(D) A corporate performance appraisal system designed exclusively for female employees within a large organization.

48. Arrange the following in the life-course sequence of a woman in a traditional society.
1. Marriage
2. Childbearing
3. Puberty
4. Widowhood

Choose the correct chronological sequence.
(A) 3, 1, 2, 4
(B) 1, 3, 2, 4
(C) 3, 2, 1, 4
(D) 2, 3, 1, 4

49. Consider the following statements and choose the correct option.
Statement I: The informal sector provides significant employment for women in developing countries.
Statement II: Working conditions in the informal sector are typically characterized by job security, high wages, and comprehensive benefits.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

50. Consider the following issues regarding globalization's impact on gender:
1. Creation of new jobs for women, often in export-oriented industries.
2. Increased vulnerability for women in low-skilled, precarious jobs.
3. The emergence of new spaces for women's agency and negotiation.
4. A uniform decrease in gender inequality across all regions.
5. Reinforcement of traditional gender roles in all contexts.

Which combination is most accurate?
(A) 1, 2, and 3
(B) 2, 4, and 5

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formal workforce.
Which of the above statements are correct?
(A) 1, 2 and 3 only
(B) 1, 4 and 5 only
(C) 2, 3 and 4 only
(D) 3, 4 and 5 only

21. A community project that teaches women financial literacy and helps them form self-help groups to access micro-loans is primarily addressing the issue of:
(A) The sex ratio at birth.
(B) Men's reproductive health.
(C) Women's access to credit.
(D) The classification of the physically challenged population.

22. Which of the following pairs INCORRECTLY links an environmental issue with its gendered impact?
(A) Water table depletion : Increased burden on women and girls for water collection.
(B) Climate change : Equal impact on men and women in all socio-economic contexts.
(C) Deforestation : Women needing to travel farther for firewood.
(D) Land degradation : Reduced agricultural productivity affecting women engaged in subsistence farming.

23. What is the core principle of 'gender mainstreaming'?
(A) Creating specialized and separate development programs targeted exclusively towards women's needs.
(B) Promoting the sociological idea that men and women are functionally identical in all biological respects.
(C) Focusing primarily on women's maternal health issues while largely ignoring the health needs of men.
(D) Ensuring that a gender perspective is central to all activities, including policy-making, research, and resource allocation.

24. Consider the following statements and choose the correct option.
Statement I: The concept of gender mainstreaming suggests that gender issues should be handled by a specialized, separate government department.
Statement II: The goal of gender mainstreaming is to make gender equality a routine concern of the mainstream development agenda.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

25. Match the sectors in List I with the examples of gender mainstreaming in List II and choose the correct option.
List I: (Sector)
P. Agriculture
Q. Health
R. Education
S. Workplace
List II: (Example of Gender Mainstreaming)
1. Ensuring equal pay for equal work and preventing sexual harassment.
2. Designing health programs that address the specific needs of both men and women.
3. Creating curricula that are free from gender stereotypes and promoting girls' enrollment.
4. Providing women farmers with equal access to land titles, credit, and new technologies.
(A) P-4, Q-2, R-3, S-1
(B) P-1, Q-3, R-2, S-4
(C) P-4, Q-3, R-1, S-2
(D) P-2, Q-4, R-3, S-1

26. Gender mainstreaming as a strategy is NOT applicable to which of the following areas?
(A) The study of plate tectonics.
(B) Health sector reforms.
(C) Agricultural extension services.
(D) Urban planning and housing policies.

27. Which of the following is a key component of gender inequality and the status of women?
(A) Men's exclusive right to political power.
(B) The natural superiority of one gender.
(C) The elimination of all differences between men and women.
(D) Women's autonomy and empowerment.

28. Consider the following dimensions:
1. Social inequality, such as restricted mobility for women.
2. Economic inequality, such as wage gaps.
3. Health inequality, such as differential access to nutrition.

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4. Domestic violence.

Which of the above are considered dimensions of gender inequality?

(A) 1 and 2 only
(B) 1, 2 and 3 only
(C) 2 and 4 only
(D) 1, 2, 3, and 4

29. What does the Gender Empowerment Measure (GEM) primarily assess?

(A) The absolute level of well-being of women in a country.
(B) The biological differences in health outcomes between men and women.
(C) The extent to which women are able to actively participate in economic and political life.
(D) The number of women who have received a primary education.

30. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.

Assertion (A): Women's empowerment has significant demographic implications.

Reason (R): Empowered women, often with higher education and economic independence, tend to have smaller families and better child survival rates.

(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

31. Which statement is correct regarding the Scheduled Castes (SC) and Scheduled Tribes (ST) population in India?

(A) The government has implemented specific development plans and programmes for the SC and ST communities.
(B) The SC and ST populations are evenly distributed across all states of India.
(C) The size and growth of the SC and ST populations are static and have not changed since independence.
(D) The composition of the SC and ST population is identical to that of the general population.

32. The development plans and programmes for SC and ST in India are primarily intended to:

(A) Isolate these communities from the mainstream.
(B) Bring about their social and economic upliftment and assess the impact on their population dynamics.
(C) Study their traditional customs for historical records.
(D) Encourage their migration to other countries.

33. Arrange the following steps in the process of empowerment leading to demographic change.

1. Improved access to education for girls.
2. Increased female labor force participation.
3. Lowered fertility rates.
4. Higher age at marriage.

Choose the logical sequence of cause and effect.

(A) 1, 4, 2, 3
(B) 2, 1, 4, 3
(C) 3, 1, 2, 4
(D) 4, 3, 1, 2

34. A government program providing land titles to ST communities in forest areas is an example of a development plan aimed at improving their:

(A) Economic base and security.
(B) Access to urban labor markets.
(C) Reproductive health.
(D) Classification as physically challenged.

35. In the context of population issues, who are referred to as the 'physically challenged population'?

(A) Individuals who participate in extreme sports.
(B) Temporary visitors to a country.
(C) People with long-term physical, mental, intellectual, or sensory impairments.
(D) A specific ethnic or religious group.

36. Consider the following aspects related to the disabled population in India:

1. Their size, growth, and distribution are important demographic variables.
2. There is no official classification system for the physically challenged population.
3. Development plans and programmes are designed for this group.
4. The size of this population is decreasing

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rapidly due to medical advancements.
5. This group is treated as a special category in population studies.

Which of the above statements are correct?
(A) 1, 2, and 4
(B) 2, 3, and 5
(C) 1, 3, and 5
(D) 1, 4, and 5

37. Regarding the disabled population in India, which statement is accurate?
(A) There is no need for specific development plans for this population group.
(B) The classification of the physically challenged population is not a relevant area of study.
(C) The study of the disabled population includes understanding its size, growth, and distribution.
(D) The disabled population is exclusively concentrated in urban areas of India.

38. What is the best way to describe the 'evolution of gender in historical perspective'?
(A) A progressive process where gender roles have become more equal across all known historical human societies.
(B) An analysis of how concepts of male and female roles have been constructed and have changed through different historical periods.
(C) A purely biological study of how male and female physical bodies have changed through the process of evolution.
(D) The academic documentation of a single, universal gender system that has remained static throughout human history.

39. Match the health issues in List I with the primarily affected groups in List II and choose the correct option.
List I: (Gender-related Health Issue)
P. Adolescent pregnancy
Q. Morbidity from unsafe abortion
R. Alcoholism and related accidents
S. Iron-deficiency anemia
List II: (Primarily Affected Group)
1. Adolescent girls
2. Men
3. Women of reproductive age
4. Adolescent girls and women

(A) P-1, Q-3, R-2, S-4
(B) P-3, Q-1, R-2, S-4
(C) P-1, Q-2, R-3, S-4
(D) P-4, Q-3, R-2, S-1

40. Consider the following statements and choose the correct option.
Statement I: Fertility is purely a biological phenomenon and is not influenced by gender roles or women's status.
Statement II: Gender dynamics, including women's education and autonomy, are strongly correlated with fertility levels in a population.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

41. Consider the relationship between the cause and the effect provided below and choose the correct option.
Cause: Increased female migration for domestic work.
Effect: Potential vulnerability to exploitation and abuse, but also an increase in women's agency and remittance flows.
(A) The cause always leads to a negative effect.
(B) The effect is completely unrelated to the cause.
(C) The cause has complex and sometimes contradictory effects.
(D) The effect is the primary cause of female migration.

42. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): The sex ratio at birth in some parts of India is significantly higher than the biological norm.
Reason (R): This is solely due to natural variations in conception and does not reflect any social practices.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

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CHAPTER 08

Population Issues: Gender and Special Groups

1. What is the core concept of 'gender' in population studies?
(A) The biological and physiological traits that distinguish between males and females at birth.
(B) The socially constructed roles, behaviors, activities, and attributes that societies consider appropriate.
(C) The total enumeration of male and female individuals residing within a specific geographic population.
(D) The specific genetic variances located within the inheritance patterns of X and Y chromosomes.

2. Which of the following statements accurately describes the relationship between gender and age-sex structure?
(A) Gender-based preferences for sons can skew the age-sex structure, particularly in younger age groups.
(B) Age-sex structure is solely determined by biological birth rates and natural mortality patterns.
(C) Gender norms have no measurable influence on the age-sex composition of a global population.
(D) Age-sex pyramids are identical in all modern societies regardless of established gender roles.

3. Match the items in List I with the descriptions in List II and choose the correct option.
List I: (Concept)
P. Gender
Q. Sex
R. Sex Ratio at Birth
S. Gender Mainstreaming
List II: (Description)
1. The biological attributes of an individual.
2. Socially constructed roles and responsibilities.
3. The number of male births for every 100 female births.
4. Integrating a gender perspective into all policies and programmes.
(A) P-2, Q-1, R-3, S-4
(B) P-1, Q-2, R-4, S-3
(C) P-2, Q-1, R-4, S-3
(D) P-1, Q-3, R-2, S-4

4. Consider the following statements and choose the correct option.
Statement I: The evolution of gender in historical perspective shows that gender roles are static and unchanging across cultures.
Statement II: Historical analysis reveals that concepts of masculinity and femininity have varied significantly over time and in different societies.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

5. All of the following are components of population influenced by gender EXCEPT:
(A) Fertility rates
(B) Mortality patterns
(C) Geological formations
(D) Migration streams

6. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): In many developing countries, there is a significant major morbidity and mortality burden on women.
Reason (R): Gender-based discrimination often leads to poorer nutrition, limited access to healthcare, and greater exposure to violence for women.

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(C) 1, 4, and 5
(D) All of the above

51. Match the terms in List I with their meanings in List II in the context of globalization and choose the correct option.
List I: (Term)
P. Marginalization
Q. Vulnerability
R. Agency
S. Spaces of power
List II: (Meaning)
1. The capacity of individuals to act independently and make their own free choices.
2. Social or economic arenas where individuals or groups can assert influence.
3. The process of being pushed to the edge of a group and accorded lesser importance.
4. The state of being exposed to the possibility of being attacked or harmed.
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-1, R-4, S-2

52. Which issue directly relates to the gendered impact of the household environment?
(A) The rate of national economic growth.
(B) International migration patterns.
(C) The classification of disabled populations.
(D) The differential health outcomes for men and women due to indoor air pollution from cooking fuels.

53. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): Environmental degradation has a differential impact on men and women.
Reason (R): Women, particularly in rural areas, are often more directly dependent on natural resources for sustenance and bear the primary responsibility for collecting water and fuel, making them more vulnerable to resource depletion.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

54. Which of the following is a correct example of gender mainstreaming in education?
(A) Establishing schools for boys only.
(B) Reviewing textbooks to remove gender stereotypes and portrayals.
(C) Providing scholarships only to male students in science.
(D) Making home science a compulsory subject only for girls.

55. All of the following are indicators used in gender empowerment indices EXCEPT:
(A) Share of seats in parliament held by women.
(B) Percentage of women in professional and technical jobs.
(C) Women's share of earned income.
(D) The average height of women compared to men.

56. Regarding the status of women in India, consider the following statements:
1. Domestic violence is a significant issue affecting women's health and well-being.
2. Women's autonomy is consistently high across all regions and social groups.
3. Economic empowerment is directly linked to women's decision-making power.
4. Cultural factors play a negligible role in determining the status of women.
Which of the above statements are correct?
(A) 1 and 3 only
(B) 2 and 4 only
(C) 1, 2 and 3 only
(D) 3 and 4 only

57. In the context of population studies in India, what does the term 'composition' of SC/ST population refer to?
(A) The musical traditions of the communities.
(B) The physical and chemical makeup of their environment.
(C) The age, sex, and rural-urban structure of the SC/ST population.
(D) The total number of people in the communities.

58. A state government policy that creates special tribal development blocks and funnels targeted

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funds for health and education is an application of:
(A) Development plans and programmes for STs.
(B) Gender mainstreaming in the private sector.
(C) A program for the physically challenged population.
(D) A universal housing scheme for all citizens.

59. Consider the following statements and choose the correct option.
Statement I: The classification of the physically challenged population is necessary for targeted policy-making and providing appropriate support.
Statement II: In India, there is only one category of disability, with no further classification.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

60. The development plans for the physically challenged population in India aim to provide them with:
(A) Segregated living facilities away from the main population.
(B) Assistance, rehabilitation, and opportunities for integration into society.
(C) Exemption from all forms of work and education.
(D) A fixed universal income without any support services.

61. Gender differences in mortality are LEAST likely to be influenced by:
(A) Socially sanctioned risk-taking behavior for men.
(B) Differential access to food and healthcare.
(C) Genetic predispositions to certain diseases.
(D) Gender-based violence.

62. The term "contraceptive technology" refers to:
(A) The range of available methods, devices, and procedures used to prevent pregnancy.
(B) Only advanced, high-tech methods of contraception.
(C) The historical development of contraceptive ideas.
(D) Software applications for tracking fertility cycles.

63. Match the social issues in List I with the relevant groups in List II and choose the correct option.
List I: (Social Issue)
P. Wage differentials in formal sector
Q. Impact of development programmes on population
R. Abuse and maltreatment issues
S. Classification of impairment
List II: (Relevant Group)
1. Physically challenged population
2. Working women and men
3. SC and ST population
4. Adolescent boys and girls
(A) P-2, Q-3, R-4, S-1
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-4, R-1, S-2
(D) P-2, Q-1, R-4, S-3

64. The "changing pattern of economic activity" under globalization refers to phenomena such as:
(A) The shift from agricultural to industrial and service-based economies.
(B) The constant rate of employment across all sectors.
(C) The decline of international trade.
(D) The uniform adoption of a single currency worldwide.

65. Consider the following statements about 'agency' in the context of gender and globalization:
1. It refers to the inability of women to make choices.
2. It is the capacity of individuals to act independently and challenge power structures.
3. Globalization can sometimes create new forms of agency for women.
4. Women's agency is irrelevant to their economic and social outcomes.
Which of the above statements are correct?
(A) 1 and 4
(B) 2 and 3
(C) 1 and 3
(D) 2 and 4

66. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): Patrilineal inheritance laws can negatively affect women's economic status.

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Reason (R): These laws traditionally pass land and property from fathers to sons, often excluding daughters from inheriting key economic resources.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

67. Which of the following is the best example of a "demographic implication" of women's empowerment?
(A) An increase in the number of female-headed businesses.
(B) A shift in voting patterns in national elections.
(C) A decline in the total fertility rate (TFR).
(D) An increase in women's participation in sports.

68. The study of the "distribution" of the Scheduled Caste population in India involves analyzing:
(A) The concentration of the SC population in certain states, districts, and rural/urban areas.
(B) The historical origins of the caste system.
(C) The distribution of government benefits among SC households.
(D) The literary works produced by SC authors.

69. Consider the following aspects regarding the physically challenged population:
1. Analysis of its size and growth.
2. Analysis of its distribution in India.
3. Analysis of its classification.
4. Development plans and programmes as a key area of study.
5. The impact of this population group on national demographics.

Which of the above statements are correct?
(A) 1, 2, 3 and 5
(B) 1, 2, 3 and 4
(C) 2, 3, 4 and 5
(D) 1, 3, 4 and 5

70. "Maternity benefits" are policies designed to address:
(A) The gender wage gap.
(B) The challenges women face in balancing work with pregnancy and childcare.
(C) The health needs of adolescent boys.
(D) The issue of land ownership for rural women.

71. Which statement most accurately describes the relationship between gender and migration?
(A) Migration is an exclusively male phenomenon.
(B) Gender roles and relations shape who migrates, why they migrate, and their experiences during migration.
(C) Women migrate only as dependents of male family members.
(D) Gender has no bearing on the causes or consequences of migration.

72. Arrange the following from macro to micro level in the context of gender analysis.
1. Global economic patterns
2. National inheritance laws
3. Household decision-making
4. Community norms

Choose the correct sequence.
(A) 1, 2, 4, 3
(B) 3, 4, 2, 1
(C) 1, 4, 2, 3
(D) 4, 3, 1, 2

73. Consider the following statements and choose the correct option.
Statement I: 'Women's work' as a concept is limited to paid employment in the formal sector.
Statement II: The measurement of women's work must also include unpaid domestic labor, care work, and subsistence activities to be comprehensive.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

74. When focusing on India in the context of morbidity and mortality burden, it implies that:
(A) India is the only country with these health problems.
(B) The general principles are illustrated using specific data and examples from India.
(C) The problems are less severe in India than elsewhere.
(D) Indian men and women have identical

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group.
(D) Only economic indicators.

124. Consider the following statements and choose the correct option.
Statement I: Contraceptive technology has remained unchanged for the past century.
Statement II: There has been significant development in contraceptive technology, leading to a wider variety of male and female methods, although access and use remain uneven.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

125. The high incidence of morbidity and mortality among women in developing countries is often linked to:
(A) Their superior biological strength.
(B) Their privileged access to resources.
(C) A combination of biological factors (e.g., childbirth) and social factors (e.g., discrimination).
(D) Their low participation in risky behaviors.

126. Consider the following statements related to the gender dimension of economic development:
1. Women's access to economic resources is a critical factor.
2. Inheritance laws are always equitable and gender-neutral.
3. Access to credit is equally easy for men and women.
4. Measurements of women's work often overlook the informal and domestic sectors.
5. Gender and poverty are unrelated phenomena.

Which of the above statements are correct?
(A) 1 and 4
(B) 2 and 3
(C) 1, 4 and 5
(D) 2, 3 and 5

127. 'Spaces of power' in the context of globalization and gender refer to:
(A) Physical locations where powerful people meet.
(B) Arenas, from the household to the global level, where gender relations are contested and where women can exercise agency.
(C) Places where electricity is generated.
(D) Virtual reality games.

128. A key feature of the 'gender divisions in urban labor markets' is:
(A) Men and women earning the same salary for all jobs.
(B) The horizontal and vertical segregation of jobs, with women often concentrated in lower-paying sectors and positions.
(C) The complete absence of women from urban labor markets.
(D) The equal representation of men and women at all levels of management.

129. Match the population groups in List I with the specific issues in List II and choose the correct option.
List I: (Population Group)
P. Women
Q. Men
R. Adolescents
S. Scheduled Tribes
List II: (Specific Issue)
1. Masculinity as a health risk factor
2. Puberty and sexual debut
3. Development plans and their population impact
4. Access to entitlements and land ownership
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-1, R-2, S-3
(C) P-4, Q-3, R-1, S-2
(D) P-2, Q-4, R-3, S-1

130. The need for the 'classification of the physically challenged population' arises from the fact that:
(A) All disabilities are the same and require the same intervention.
(B) Different types of impairments require different kinds of support and policies.
(C) It is a method to rank individuals based on their disability.
(D) The government requires this data for census purposes only, with no policy implications.

131. Which of the following statements about 'women's autonomy' is INCORRECT?
(A) It is often measured by indicators like freedom of movement and role in household decisions.

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4. Access to credit
5. Abortion

Which of the above are recognized as key adolescent issues?
(A) 1, 2, 3, 4
(B) 1, 2, 3, 5
(C) 2, 3, 4, 5
(D) 1, 3, 4, 5

84. The concept of 'women's autonomy' is best defined as:
(A) Women living in complete isolation from society.
(B) The ability of women to make independent decisions about their own lives and bodies.
(C) A government program for single women.
(D) The total number of unmarried women in a population.

85. Which of the following is an INCORRECT statement about gender?
(A) Gender is socially constructed.
(B) Gender roles can change over time.
(C) Gender is synonymous with biological sex.
(D) Gender influences life experiences and opportunities.

86. Which of the following best exemplifies the 'agency' of migrant women?
(A) A woman being trafficked against her will.
(B) A woman who decides to migrate for a better job, sends remittances home, and negotiates her role within her family.
(C) A woman who accompanies her husband abroad and has no independent income or social life.
(D) A woman who is forced to return home by her family.

87. Consider the following statements and choose the correct option.
Statement I: The major morbidity and mortality burden in the developing world affects men and women equally across all health conditions.
Statement II: Women face specific health risks related to reproductive health, while men face higher risks from accidents and certain lifestyle factors.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

88. The differential impact of environmental degradation on men and women is a key aspect of:
(A) Gender and environment studies.
(B) The study of SC/ST population distribution.
(C) Contraceptive technology.
(D) The classification of disabilities.

89. Match the special groups in List I with their key study aspects in List II and choose the correct option.
List I: (Special Group)
P. Scheduled Castes (SC)
Q. Scheduled Tribes (ST)
R. Physically Challenged
S. Adolescent Girls
List II: (Key Study Aspect)
1. Classification and development programmes.
2. Development plans and their population impact.
3. Growth, composition, and distribution.
4. Health, nutrition, and reproductive issues like pregnancy.
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-2, R-1, S-4
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-1, R-4, S-2

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90. An example of gender mainstreaming in a public workplace would be:
(A) Hiring only men for senior positions.
(B) Establishing a clear policy against sexual harassment and a mechanism for redressal.
(C) Providing separate cafeterias for men and women.
(D) Paying women less than men for the same work.

91. 'Masculinity' is recognized as a major risk factor for men's health because:
(A) It is a biological condition that weakens the immune system.
(B) Socially constructed ideals of masculinity may promote risk-taking, violence, and avoidance of healthcare.
(C) It is a term for a specific disease affecting only men.
(D) It encourages a healthy diet and regular

exercise.

92. Consider the following factors:
1. Land ownership
2. Inheritance laws
3. Access to credit
4. Wage differentials

All of these are components of which larger theme?
(A) Health and nutrition of adolescents.
(B) The gender dimension of economic development.
(C) Development programmes for the disabled.
(D) The concept of gender mainstreaming.

93. The "historical perspective" on the evolution of gender helps us understand that:
(A) Current gender roles are natural and have always existed.
(B) Gender relations are dynamic and have been shaped by social, economic, and political forces.
(C) There was no concept of gender in the past.
(D) Men have always been in a subordinate position historically.

94. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): The involvement of men is crucial for the success of family planning programs.
Reason (R): Men's attitudes and cooperation significantly influence contraceptive use, and they also have their own reproductive health needs.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

95. In the context of globalization, 'marginalization' refers to:
(A) The process by which certain groups (e.g., female workers in specific sectors) are pushed to the fringes of economic and social life.
(B) The drawing of margins in notebooks.
(C) The benefit of globalization being shared equally by everyone.
(D) The central role given to all workers in a globalized economy.

96. Housing and household environment can have a differential impact on women's life because:
(A) Women spend, on average, more time within the domestic sphere, making them more exposed to issues like indoor pollution or poor sanitation.
(B) Men are immune to the effects of poor housing.
(C) Housing quality has no connection to health or well-being.
(D) Only women are legally allowed to own houses.

97. Consider the following statements regarding the SC/ST population in India:
1. Size and growth are key demographic indicators for these groups.
2. Their geographical distribution is uniform across the country.
3. Specific development programmes have been designed for them.
4. The impact of these programmes on their population characteristics is a subject of study.
5. These communities are recognized as special groups in population studies.

Which of the above statements are correct?
(A) 1, 2 and 3
(B) 2, 4 and 5
(C) 1, 3 and 4
(D) 3, 4 and 5

98. The focus on 'women and family planning programs' acknowledges that:
(A) Women are solely responsible for family planning.
(B) Historically, family planning programs have often targeted women as primary users of contraception.
(C) Men are not part of families.
(D) Family planning programs are no longer relevant.

99. Which of the following does NOT fall under the classification of the physically challenged population?
(A) A person with a locomotor disability.
(B) A person with a visual impairment.

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(C) A person with a temporary illness like the common cold.
(D) A person with a hearing impairment.

100. Arrange the following events/conditions related to adolescent health in a cause-and-consequence relationship.
1. Lack of awareness about contraception
2. Adolescent pregnancy
3. Unsafe abortion
4. Sexual debut

Choose the logical chronological and causal sequence.
(A) 2, 4, 1, 3
(B) 4, 1, 2, 3
(C) 1, 3, 2, 4
(D) 3, 2, 1, 4

101. Consider the following statements and choose the correct option.
Statement I: Access to economic resources and entitlements for women are the same thing.
Statement II: 'Entitlements' refer to the legal and social rights to access resources, while 'access' refers to the actual ability to use them, which can be constrained by other factors.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

102. The concept of 'vulnerability' in the context of globalization and gender highlights that:
(A) Women are inherently weak and incapable.
(B) Certain economic changes can place women in precarious situations with little social or legal protection.
(C) All women become more powerful through globalization.
(D) Vulnerability is only an issue in pre-globalized societies.

103. Match the development issues in List I with the gender dimensions in List II and choose the correct option.
List I: (Development Issue)
P. Water scarcity
Q. Introduction of new farm machinery
R. Opening of a garment factory
S. Closure of a local health clinic
List II: (Gender Dimension)
1. May create jobs for women but with poor working conditions.
2. May displace female agricultural laborers.
3. Increases women's time burden for water collection.
4. Disproportionately affects women's access to reproductive healthcare.
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-2, R-1, S-4
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-1, R-4, S-2

104. What is the demographic significance of studying 'domestic violence'?
(A) It has no demographic significance.
(B) It can impact women's physical and mental health, reproductive choices, and mortality.
(C) It is solely a legal issue, not a demographic one.
(D) It only affects the economic status of a family.

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105. 'Gender empowerment measure (GEM)' was developed to:
(A) Measure the gender gap in basic capabilities like health and education.
(B) Measure the inequality in key areas of economic and political participation and decision-making.
(C) Count the number of empowered women in a country.
(D) Assess the level of environmental degradation.

106. Consider the following statements regarding gender in population studies:
1. Gender is a biological constant.
2. The relationship between gender and fertility is a key area of study.
3. Gender can influence migration patterns.
4. Gender roles do not affect mortality differentials.

Which of the above statements are correct?
(A) 1 and 4
(B) 2 and 3
(C) 1, 2 and 3
(D) 2, 3 and 4

107. The 'impact of development plans and programmes for SC and ST' is studied to:
(A) Criticize all government efforts.

health profiles.

75. Match the concepts in List I with the examples in List II and choose the correct option.
List I: (Concept)
P. Gender and Poverty
Q. Women's Entitlement
R. Gender division of labor
S. Women's Autonomy
List II: (Example)
1. Women being able to decide on their own healthcare.
2. The 'feminization of poverty' phenomenon.
3. Women's legal right to schooling.
4. Men primarily working in fields, women in domestic chores.
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-3, R-4, S-1
(C) P-4, Q-1, R-2, S-3
(D) P-2, Q-4, R-3, S-1

76. The issue of 'abuse and maltreatment' of adolescents is a concern for their:
(A) Economic productivity only.
(B) Physical, mental, and reproductive health.
(C) Political participation only.
(D) Access to credit.

77. Which of the following is NOT a major risk factor for men's health?
(A) Masculinity
(B) Alcoholism
(C) Accident
(D) Genetic disorders

78. Consider the following statements regarding 'gender in the workplace':
1. Gender mainstreaming applies to both public and private workplaces.
2. Issues like wage differentials fall under this topic.
3. Working conditions are a key aspect of gender analysis in the workplace.
4. The concept is only relevant for female employees.
Which of the above statements are correct?
(A) 1 and 2 only
(B) 1, 2 and 3 only
(C) 3 and 4 only
(D) All are correct

79. The term 'feminization of poverty' (related to 'gender and poverty') means:
(A) Poverty affects only women.
(B) Women have unique and effective ways of dealing with poverty.
(C) The phenomenon of a growing proportion of the poor being women or from female-headed households.
(D) A new fashion trend among economically disadvantaged groups.

80. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): Depletion of the water table can disproportionately affect women's lives.
Reason (R): In many societies, women and girls are primarily responsible for fetching water, and a lower water table means they must travel longer distances and spend more time on this task.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

81. A law granting women equal rights to inherit ancestral land addresses the issue of:
(A) Reproductive health technology.
(B) Women's access to land ownership and entitlements.
(C) Gender mainstreaming in education.
(D) The size and growth of the disabled population.

82. The 'impact on population' of development programmes for SCs and STs could include changes in their:
(A) Fertility rates, mortality rates, and migration patterns.
(B) Traditional clothing and food habits only.
(C) Genetic makeup.
(D) Language and dialect.

83. Consider the following issues faced by adolescents:
1. Sexual debut
2. Puberty
3. Abuse and maltreatment

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participation in social and economic life.
(D) To conduct medical experiments on them.

116. Match the gender concepts in List I with their implications in List II and choose the correct option.
List I: (Gender Concept)
P. Gender inequality in health
Q. Gender inequality in economy
R. Gender inequality in politics
S. Gender inequality in family
List II: (Implication)
1. Lower representation of women in parliament.
2. Unequal power in decision-making about household expenses.
3. Girls receiving less food or healthcare than boys.
4. Women earning less than men for comparable work.
(A) P-3, Q-4, R-1, S-2
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-1, R-4, S-2
(D) P-4, Q-3, R-2, S-1

117. The term 'reproductive health' of women and men encompasses all the following EXCEPT:
(A) The ability to have a satisfying and safe sex life.
(B) The capability to reproduce and the freedom to decide if, when, and how often to do so.
(C) Access to information and a range of contraceptive methods.
(D) The health of the reproductive organs for aesthetic purposes only.

118. Which statement best captures the concept of 'gender and poverty'?
(A) Poverty is gender-neutral.
(B) Gender inequality can be both a cause and a consequence of poverty.
(C) Only men can be poor.
(D) Eradicating poverty will automatically solve all gender issues.

119. A study analyzing the concentration of ST population in the northeastern states of India is a study of their:
(A) Composition
(B) Growth
(C) Distribution
(D) Development plans

120. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): Gender mainstreaming is not about creating a separate 'women's agenda'.
Reason (R): It is about seeing to it that the mainstream agenda, in any sector, is designed to benefit both men and women and does not perpetuate inequality.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

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121. Consider the following consequences:
1. Increased time burden on women for collecting firewood.
2. Displacement of communities, affecting women's social networks.
3. Loss of traditional knowledge held by women about local ecosystems.
4. Men being forced to migrate for work, leaving women with a 'double burden'.
These are all potential differential impacts on women due to:
(A) Economic prosperity
(B) The implementation of maternity benefits
(C) Environmental degradation
(D) Improved access to credit

122. Which of the following is the most direct demographic implication of adolescent pregnancy?
(A) It contributes to the lowering of the average age of childbearing in a population.
(B) It increases the gender wage gap.
(C) It affects land ownership patterns.
(D) It leads to better health outcomes for the mother and child.

123. The 'size, growth, composition and distribution' are fundamental demographic measures used to describe:
(A) Only the general population.
(B) Only special groups like SC, ST, and the disabled.
(C) Any defined population or sub-population

(B) Understand whether these interventions are achieving their goals of upliftment and affecting demographic outcomes.
(C) Prove that such programmes are unnecessary.
(D) Focus solely on the financial cost of the programmes.

108. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): The process of 'profiling women's work' is essential for gender-sensitive policy making.
Reason (R): By making the full range of women's economic contributions visible, including unpaid work, policymakers can better design programs that support women's economic empowerment.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

109. Which of the following is NOT a component of the 'gender dimension of economic development'?
(A) Women's access to economic resources.
(B) Wage differentials.
(C) Women's hair and clothing styles.
(D) Maternity benefits.

110. 'Changes in climate, water table and land use' are significant in population studies because:
(A) They are interesting geographical facts.
(B) These environmental changes have differential impacts on men and women, constituting a population issue.
(C) They affect men and women in exactly the same way.
(D) They are exclusively a concern for developed countries.

111. Consider the following factors related to men's health:
1. Masculinity as a social construct
2. Alcoholism
3. Tobacco consumption
4. Drug consumption
5. Accidents
Which of the above are recognized as major risk factors for men's health?
(A) 1, 2 and 3 only
(B) 2, 3 and 4 only
(C) 1, 2, 3, 4 and 5
(D) 1, 3 and 5 only

112. The concept of 'negotiation' in the context of globalization and gender refers to:
(A) Women's ability to bargain within their families and communities for better conditions or more autonomy.
(B) The formal trade negotiations between countries.
(C) The price negotiation for goods in a market.
(D) A complete rejection of all traditional roles.

113. Consider the following statements and choose the correct option.
Statement I: The size, growth and distribution of the disabled population in India are not considered important for demographic analysis.
Statement II: Modern demographic studies explicitly include the study of the size, growth and distribution of the disabled/physically challenged population in India.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

114. The 'informal sector involvement' of women often implies:
(A) Secure, high-paying jobs with full legal protection.
(B) Employment that is often unregulated, with low pay, poor conditions, and no social security.
(C) A formal invitation to join a prestigious club.
(D) Work that is done only for recreation.

115. Which of the following is a primary objective of development plans and programmes for the physically challenged population in India?
(A) To provide lifelong financial support without promoting skill development.
(B) To create barriers to their participation in society.
(C) To facilitate their rehabilitation and equal

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(B) Higher autonomy is generally associated with better health and demographic outcomes.
(C) It is a key dimension of empowerment.
(D) It means women must not consult their families in any decision-making.

132. The term 'growth' in the context of 'size, growth, composition, and distribution' of a population group refers to:
(A) The increase in physical height of individuals.
(B) The change in the total number of individuals in the group over a period of time.
(C) The economic prosperity of the group.
(D) The spiritual development of the community.

133. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): The health problems experienced by men and women are not identical.
Reason (R): While some health issues are common to both, others are specific to biological sex (e.g., prostate cancer in men, cervical cancer in women) or are influenced by gendered behaviors and roles.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

134. A policy aiming to ensure girls are not taken out of school to help with household chores during a drought is an example of addressing:
(A) The differential impact of environmental degradation.
(B) Men's health issues.
(C) The classification of disabilities.
(D) Wage differentials in the formal sector.

135. Which of the following is an explicitly recognized dimension of gender inequality and challenges to the status of women?
(A) Political apathy
(B) Domestic violence
(C) Technological incompetence
(D) Lack of artistic talent

136. What is the primary difference between 'sex' and 'gender'?
(A) 'Sex' is biological, while 'gender' is a social construct.
(B) There is no difference; the terms are interchangeable.
(C) 'Gender' is biological, while 'sex' is a social construct.
(D) 'Sex' refers to humans, while 'gender' refers to animals.

137. Which of the following topics is NOT typically part of studies on gender and population?
(A) Gender and its relationship with fertility and mortality.
(B) Development plans for Scheduled Castes and Scheduled Tribes.
(C) The detailed chemical composition of contraceptive pills.
(D) The concept of gender mainstreaming in various sectors.

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138. Which of the following statements is TRUE regarding gender and migration?
(A) Gender roles and power relations are left behind in the country of origin and do not affect migrants' lives.
(B) Migration can reinforce, but also sometimes challenge, traditional gender divisions of labor.
(C) Historically, only men have ever migrated for work.
(D) Female migration is always a story of exploitation with no possibility of empowerment.

139. Consider the following statements and choose the correct option.
Statement I: The major morbidity burden in developing countries is solely due to infectious diseases.
Statement II: The burden includes a complex mix of communicable diseases, non-communicable diseases, and health issues related to reproduction and violence, with different patterns for men and women.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.

(D) Statement I is false, but Statement II is true.

140. A government initiative to ensure that all new public buildings are equipped with ramps and accessible toilets is an example of a:
(A) Programme for the physically challenged population.
(B) Programme for Scheduled Tribes.
(C) Gender mainstreaming policy.
(D) Family planning programme.

141. Consider the following statements about globalization and gender:
1. Globalization has led to a changing pattern of economic activity.
2. It can cause marginalization and vulnerability for some women.
3. It can also create spaces for female agency and negotiation.
4. Gender divisions in urban labor markets are a related issue.

Which of the above statements are correct?
(A) 1 and 2 only
(B) 1, 2 and 3 only
(C) 3 and 4 only
(D) 1, 2, 3 and 4

142. The concept of "working condition" as a gender issue includes all of the following EXCEPT:
(A) Safety at the workplace.
(B) Protection from harassment.
(C) The national origin of the company's CEO.
(D) Provision of creche facilities.

143. Development plans are typically formulated for which of the following groups to address population issues?
(A) SC, ST, and Physically Challenged
(B) Gender and Adolescents
(C) Men and Women
(D) Rural and Urban populations

144. 'Gender mainstreaming in agriculture' could involve:
(A) Ensuring agricultural research focuses on crops grown by both men and women.
(B) Providing targeted extension services to women farmers.
(C) Ensuring women have titles to the land they farm.
(D) All of the above.

145. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): Women's massive involvement in the informal sector is a mixed blessing.
Reason (R): While it provides a source of income, the work is often characterized by low wages, lack of benefits, and poor working conditions, making women vulnerable.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

146. Which of the following correctly pairs a concept with its definition?
(A) Women empowerment: The process of decreasing women's access to resources.
(B) Women autonomy: The ability of women to make decisions concerning their own lives.
(C) Domestic violence: A private family matter with no public health implications.
(D) Gender inequality: A state of perfect balance and equality between men and women.

147. A study that examines the percentage of Scheduled Castes living in urban versus rural areas is analyzing the population's:
(A) Growth
(B) Distribution
(C) Composition
(D) Size

148. Match the risk factors in List I with the associated health problems in List II and choose the correct option.
List I: (Risk Factor)
P. Unsafe Abortion
Q. Tobacco Consumption
R. Indoor Air Pollution from biofuels
S. Unprotected Sexual Debut
List II: (Associated Health Problem)
1. Lung cancer, cardiovascular diseases
2. Respiratory illnesses, particularly in women and children
3. STIs, adolescent pregnancy
4. Sepsis, hemorrhage, death
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-1, R-2, S-3

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(C) P-4, Q-3, R-1, S-2
(D) P-2, Q-4, R-3, S-1

149. The concept of 'reproductive health of men' would include issues like:
(A) Prevention and treatment of sexually transmitted infections (STIs).
(B) Infertility issues.
(C) Responsible sexual behavior and contraceptive use.
(D) All of the above.

150. Consider the following statements regarding adolescent health:
1. Puberty is a significant event in the lives of adolescent boys and girls.
2. The study of adolescent issues includes both boys and girls.
3. Health and nutrition are key issues for adolescents.
4. Sexual debut and its consequences are part of adolescent health studies.
5. Maltreatment and abuse are not considered health issues for adolescents.

Which of the above statements are correct?
(A) 1, 2 and 5
(B) 2, 3 and 5
(C) 1, 3 and 4
(D) 2, 4 and 5

151. What is a "wage differential" in the context of gender?
(A) The difference in pay between men and women, often for the same or comparable work.
(B) The difference in wages between workers in different countries.
(C) The bonus paid to all workers at the end of the year.
(D) The variation in wages based on age and experience, regardless of gender.

152. Consider the following statements and choose the correct option.
Statement I: Globalization has universally led to the empowerment of all women.
Statement II: The impacts of globalization are complex and varied, creating opportunities for some women while increasing vulnerability for others.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

153. A focus on "women's access to economic resources" involves an analysis of their ability to:
(A) Control and benefit from things like land, credit, and income.
(B) Participate in cultural festivals.
(C) Watch television programs.
(D) Change their legal first name.

154. The differential impact of a depleting water table on men and women is most pronounced in:
(A) Urban areas with piped water supply.
(B) Rural areas where water collection from distant sources is common.
(C) Societies where men are responsible for all household chores.
(D) Developed countries with advanced water management.

155. Which of the following is NOT an aspect of gender mainstreaming?
(A) Analyzing the differential impact of a policy on men and women.
(B) Creating separate, isolated projects for women that have no connection to mainstream development.
(C) Integrating gender perspectives in the design, implementation, and evaluation of all policies.
(D) Ensuring both men and women participate in and benefit from development processes.

156. The analysis of the impact of development programmes for SCs and STs on their population involves looking at changes in:
(A) Their demographic indicators like fertility, mortality, and migration.
(B) Their political ideologies.
(C) Their taste in music and art.
(D) Their physical appearance.

157. Which of the following is a key issue under the topic of adolescent boys and girls?
(A) Retirement planning.
(B) Puberty and sexual debut.
(C) Voting rights.

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(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

229. A health policy that focuses on reducing maternal mortality is a direct application of concern for:
(A) The major morbidity and mortality burden on women.
(B) Men's reproductive health.
(C) The distribution of the physically challenged population.
(D) Gender wage differentials.

230. Match the population components in List I with the gender influences in List II and choose the correct option.
List I: (Population Component)
P. Fertility
Q. Mortality
R. Migration
S. Age-Sex Structure
List II: (Gender Influence)
1. Female feticide altering the ratio of boys to girls.
2. Gender-specific patterns of movement for labor or marriage.
3. Women's education level influencing the number of children born.
4. Higher risk-taking by men leading to higher death rates in young adulthood.
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-4, R-2, S-1
(C) P-4, Q-3, R-1, S-2
(D) P-3, Q-1, R-4, S-2

231. The term 'masculinity' as a health risk implies that societal expectations for men to be 'tough' can lead them to:
(A) Seek healthcare promptly for any ailment.
(B) Engage in open discussions about their feelings.
(C) Ignore symptoms, avoid check-ups, and engage in risky behaviors.
(D) Adopt a perfectly balanced diet and exercise regimen.

232. 'Maternity benefits' are an example of a policy measure to address:
(A) The intersection of women's reproductive role and their economic participation.
(B) The need for men to take more holidays.
(C) The problem of child labor.
(D) The health of elderly women.

233. The 'changing pattern of economic activity' due to globalization has, for many women, meant a shift:
(A) From unpaid agricultural/domestic work to paid, often low-skilled, manufacturing or service work.
(B) From secure government jobs to insecure private jobs.
(C) From urban to rural employment.
(D) Away from any form of economic activity.

234. The concept of 'gender in the workplace' applies to:
(A) Only private sector companies.
(B) Only public sector organizations.
(C) Both public and private workplaces.
(D) Only workplaces in developed countries.

235. Consider the following:
1. Low female literacy.
2. Preference for male children.
3. Limited access to healthcare for women.
4. High maternal mortality.
5. Prevalence of domestic violence.
These factors collectively contribute to a low:
(A) Status of men.
(B) Level of technology.
(C) National income.
(D) Status of women.

236. The demographic study of Scheduled Castes in India would involve analyzing their:
(A) Size, growth, composition, and distribution.
(B) Traditional dance forms only.
(C) International migration patterns.
(D) Political affiliations exclusively.

237. A key goal of development programmes for the physically challenged population is:
(A) Segregation
(B) Empowerment and inclusion
(C) Stigmatization
(D) Charity without empowerment

238. Which statement is INCORRECT regarding gender?
(A) It refers to socially constructed roles.

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including their size, growth, composition, distribution, and the impact of specific development plans.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

166. A skewed sex ratio at birth is a demographic indicator that may point to:
(A) High levels of gender equality.
(B) The social and cultural practice of son preference and sex-selective abortion.
(C) A natural biological anomaly common in all societies.
(D) The impact of climate change on human reproduction.

167. Which of the following is NOT an economic resource for which women's access is typically a major developmental concern?
(A) Land ownership
(B) Credit
(C) Social media followers
(D) Entitlements

168. Match the terms in List I with the broader categories in List II and choose the correct option.
List I: (Term)
P. Wage differentials
Q. Adolescent pregnancy
R. Gender Empowerment Measure (GEM)
S. Classification of disability
List II: (Category)
1. Gender inequality and status of women
2. Gender dimension of economic development
3. Health and Nutrition issues of adolescent boys and girls
4. Physically challenged population
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-3, R-1, S-4
(C) P-4, Q-1, R-2, S-3
(D) P-2, Q-4, R-3, S-1

169. What does the term 'inheritance laws' signify in the context of gender and development?
(A) The biological traits inherited from parents.
(B) The legal rules governing how property is passed down, which can be a major source of gender inequality.
(C) The cultural traditions passed from one generation to the next.
(D) The laws of genetic inheritance discovered by Gregor Mendel.

170. Consider the following statements regarding globalization and gender:
1. Globalization creates new economic activities.
2. Women's participation in these activities is often in specific, gendered roles.
3. This can lead to new forms of agency but also new vulnerabilities.
4. These dynamics are often related to gender divisions in labor markets.
5. These changes can have an impact on gender and migration patterns.
Which of the above statements are accurate?
(A) 1, 2, and 3
(B) 1, 4, and 5
(C) 2, 3, and 4
(D) All of the above

171. A poor household environment, such as the use of polluting cooking fuels, has a differential impact because:
(A) Men are biologically immune to smoke.
(B) Women and children often spend more time indoors and near the cooking area, leading to higher exposure.
(C) Such fuels are only used in households where women are absent.
(D) The impact is purely economic and has no health dimension.

172. The ultimate goal of 'gender mainstreaming' is to:
(A) Achieve gender equality by ensuring that the concerns and experiences of both women and men are integral to all societal planning.
(B) Make gender a separate and isolated policy concern.
(C) Reverse gender roles so that women dominate men.
(D) Focus exclusively on men's issues to create a balance.

173. What is the central theme of 'gender inequality and status of women'?

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(A) The celebration of traditional gender roles.
(B) The examination of disparities between men and women in social, economic, cultural, and health spheres.
(C) The biological differences between men and women.
(D) The historical achievements of famous women.

174. Which of the following is the best example of 'women's autonomy' in a health context?
(A) A woman's husband deciding which contraceptive method she should use.
(B) A woman being able to choose her preferred method of family planning after receiving full information.
(C) A doctor forcing a woman to undergo sterilization.
(D) A woman having no access to or information about contraception.

175. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): The official classification of the physically challenged population is an important administrative tool.
Reason (R): Such classification allows the government to design and implement targeted welfare schemes, educational support, and rehabilitation programs based on the specific needs associated with different disabilities.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

176. Which of these is a component of population structure directly affected by son preference?
(A) Age-sex structure
(B) Ethnic composition
(C) Religious composition
(D) Linguistic diversity

177. Consider the following statements and choose the correct option.
Statement I: The historical perspective on gender shows a linear and universal progression towards equality in all cultures.
Statement II: The historical evolution of gender is complex, non-linear, and varies significantly across different societies and time periods.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

178. Why do studies often focus on the reproductive health of both women and men?
(A) To emphasize that reproductive health is a societal issue, not just a 'woman's issue'.
(B) To suggest that men and women have identical reproductive health needs.
(C) To promote male reproductive health at the expense of female reproductive health.
(D) To fulfill a quota for mentioning men in the curriculum.

179. A major health problem often experienced by men, linked to social norms of masculinity, is:
(A) Anemia from menstruation.
(B) Higher rates of death from accidents and violence.
(C) Complications from childbirth.
(D) Osteoporosis post-menopause.

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180. Consider the following issues:
1. Puberty
2. Sexual debut
3. Adolescent pregnancy
4. Abortion

Which of the above are recognized health and nutrition issues of adolescent boys and girls?
(A) 1 and 2 only
(B) 1, 2 and 3 only
(C) 1, 2, 3 and 4
(D) 3 and 4 only

181. 'Access to credit' is a critical component of women's economic empowerment because:
(A) It is a status symbol.
(B) It has no real impact on their economic condition.
(C) It allows them to start or expand businesses and generate independent income.
(D) It is only available to men.

182. 'Profiling women's work' is an important exercise to counter the problem of:
(A) Women being overpaid for their work.

(B) The statistical invisibility of women's economic contributions, especially in the unpaid and informal sectors.
(C) Too many women working in high-status jobs.
(D) Men being excluded from the workforce.

183. Which statement accurately describes the gender dimension of the informal sector?
(A) It is comprised exclusively of male workers.
(B) It offers high wages, job security, and excellent benefits to all its workers.
(C) A large proportion of women workers in developing countries are found in this sector, often in precarious conditions.
(D) It is a small and insignificant part of the economy.

184. The term 'marginalization' under the topic of globalization implies that:
(A) Everyone benefits equally from global economic integration.
(B) Some groups, potentially including certain categories of female workers, may be pushed to the fringes of the new economy.
(C) The margins of books are becoming more important.
(D) All workers are moved to the center of economic power.

185. A differential impact of climate change on men and women might be seen when:
(A) A heatwave affects everyone in a city equally.
(B) A drought forces girls to drop out of school to fetch water from farther away, while boys' education is unaffected.
(C) Both men and women benefit from a new irrigation project.
(D) Men and women both enjoy a pleasant sunny day.

186. Which of the following is the BEST example of 'gender mainstreaming in health'?
(A) Building hospitals only for women.
(B) Designing a national health survey that collects and analyzes data disaggregated by sex to understand different health needs and access issues.
(C) Assuming that men and women have identical health needs.
(D) Training only female doctors.

187. 'Domestic violence' is considered a public health and demographic issue because it:
(A) Is a private matter between couples.
(B) Leads to increased rates of injury, mental illness, maternal mortality, and can affect reproductive decisions.
(C) Only happens in a small number of families and has no wider impact.
(D) Is an issue that only law enforcement should deal with.

188. Which of the following best explains the 'composition' of the SC population in India?
(A) The total number of SC individuals in the country.
(B) The geographical spread of the SC population across states.
(C) The breakdown of the SC population by age groups, sex, and rural-urban residence.
(D) The rate at which the SC population is increasing.

189. A program that provides free prosthetic limbs and vocational training to amputees falls under:
(A) Gender dimension of economic development.
(B) Development Plans and Programmes for the physically challenged population.
(C) Development plans for Scheduled Tribes.
(D) Gender mainstreaming in education.

190. Consider the following statements and choose the correct option.
Statement I: Masculinity, alcoholism, and tobacco use are identified as major health risk factors for women.
Statement II: Masculinity, alcoholism, tobacco and drug consumption, and accidents are identified as major risk factors for men's health.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

191. The relationship between gender and fertility is complex, but generally, lower fertility rates are associated with:
(A) Lower levels of female education and empowerment.
(B) Higher levels of female education and empowerment.

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(C) A complete absence of men in the society.
(D) Strict adherence to traditional gender roles.

192. Which of the following is an example of the gendered impact of migration?
(A) A country's overall remittance earnings.
(B) The establishment of "remittance corridors" where male migration is high, leading to a "feminization of agriculture" back home.
(C) The change in a country's passport design.
(D) The total number of airports in a country.

193. The major health problems experienced by women in the developing world often center around:
(A) Male-pattern baldness.
(B) Sports-related injuries.
(C) Their reproductive role and lower social status.
(D) Old-age pensions.

194. The differential use of male and female methods of contraception refers to:
(A) The fact that some methods are biologically for men (e.g., condoms, vasectomy) and others for women (e.g., pills, IUDs).
(B) The observed patterns of which gender's methods are more commonly used in a population.
(C) Both A and B.
(D) The idea that all methods can be used by either gender.

195. Consider the following elements:
1. Women's access to land ownership.
2. Measurements of women's work.
3. Wage differentials.
4. Maternity benefits.
5. Women's informal sector involvement.

Under which major heading are these elements typically grouped?
(A) Gender dimension of economic development
(B) Gender and migration
(C) Health and Nutrition issues of adolescents
(D) Scheduled Castes and Scheduled Tribes

196. The phrase 'agency, negotiation and spaces of power' suggests that even within constraints, women can be:
(A) Active agents who shape their own lives.
(B) The sole cause of their own problems.
(C) Completely powerless and without hope.
(D) Uninterested in changing their circumstances.

197. The differential impact of the household environment is a concept that acknowledges:
(A) Men and women experience their living space in the exact same way.
(B) Factors like kitchen smoke or distance to a water source can affect men and women differently due to the gendered division of labor.
(C) Household environment has no bearing on health.
(D) Only rich people have a household environment.

198. The 'demographic implications' of women's empowerment could include:
(A) A decrease in fertility rates.
(B) An improvement in child survival rates.
(C) A change in age at marriage.
(D) All of the above.

199. A government report that provides data on the number of people with locomotor disabilities versus visual impairments is undertaking an act of:
(A) Gender mainstreaming.
(B) Classification of the physically challenged population.
(C) A study of Scheduled Caste distribution.
(D) A measurement of women's work.

200. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): The 'concept and meaning of gender' is a foundational topic in population studies.
Reason (R): Understanding the distinction between biological sex and socially constructed gender is essential to analyze issues from health to economic development.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

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201. Gender-based differences in mortality patterns mean that:
(A) Men and women die at the same rates from the same causes.
(B) In many societies, men have higher mortality rates at most ages, but women in some age groups face high risks from childbirth.
(C) Women always live longer than men in all societies.
(D) Mortality is unrelated to gender.

202. Which statement best represents the perspective on contraceptive technology in relation to women's health?
(A) It is a purely technical subject with no social dimensions.
(B) It is relevant in the context of family planning programs, women's health, and the differential use of male/female methods.
(C) Modern studies focus only on historical and outdated methods.
(D) Contraceptive technology is only discussed in relation to men's health.

203. Match the terms in List I with the explanations in List II and choose the correct option.
List I: (Term)
P. Entitlements (Women's)
Q. Vulnerability (in Globalization)
R. Autonomy (Women's)
S. Agency (in Globalization)
List II: (Explanation)
1. Capacity to act independently and make choices.
2. Exposure to risk and harm, e.g., in precarious jobs.
3. Legal or social right to command resources.
4. Degree of control over one's own life and decisions.
(A) P-3, Q-2, R-4, S-1
(B) P-1, Q-2, R-3, S-4
(C) P-3, Q-4, R-2, S-1
(D) P-4, Q-3, R-1, S-2

204. "Housing, household environment and its differential impact" primarily refers to how:
(A) Architectural styles differ globally.
(B) The quality and nature of the domestic space affects the health, workload, and safety of men and women differently.
(C) Real estate prices fluctuate in urban areas.
(D) Men and women prefer different colors for wall paint.

205. Consider the following actions:
1. Analyzing how a new irrigation project will affect men's and women's farming tasks.
2. Rewriting school textbooks to show men and women in non-traditional roles.
3. Implementing a policy for paternity leave in a public sector company.
4. Ensuring women are represented on a village water management committee.
These are all examples of:
(A) Gender Empowerment Measure (GEM)
(B) Programs for the physically challenged
(C) Gender mainstreaming
(D) Study of Scheduled Tribes

206. Which of the following is explicitly recognized as a component of the status of women that has demographic implications?
(A) Women's culinary skills.
(B) Women's fashion sense.
(C) Women's autonomy and empowerment.
(D) Women's preference for literature.

207. A study that maps the districts in India with high concentrations of Scheduled Tribe population is focusing on their:
(A) Growth
(B) Size
(C) Composition
(D) Distribution

208. Consider the following statements and choose the correct option.
Statement I: Development plans for special groups like SC, ST, and the physically challenged are designed without any consideration for their potential impact on population dynamics.
Statement II: Population analysis requires an understanding of these plans and their impact on the population, suggesting a link between development interventions and demographic outcomes.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

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209. The 'evolution of gender in historical perspective' reveals that gender roles are:
(A) Biologically determined and fixed.
(B) Socially constructed and variable across time and culture.
(C) Always beneficial for both men and women.
(D) A modern invention with no historical precedent.

210. A major morbidity burden on women in developing countries includes:
(A) Health consequences of malnutrition and anemia.
(B) Complications related to pregnancy and childbirth.
(C) Health impacts of domestic violence.
(D) All of the above.

211. Consider the following factors:
1. Masculinity
2. Alcoholism
3. Tobacco consumption
4. Accidents

Which of the above are recognized as major risk factors for men's health?
(A) 1, 2 and 3 only
(B) 2, 3 and 4 only
(C) 1, 2, 3, 4 and 5
(D) 1, 3 and 5 only

212. The issue of 'abuse and maltreatment' is particularly relevant for adolescents because:
(A) They are in a transitional phase of life, which can make them more vulnerable.
(B) They are the only group that experiences abuse.
(C) They are economically independent and powerful.
(D) They possess full legal rights as adults.

213. The focus on 'women's access to economic resources' is central to the study of gender and development because:
(A) Economic independence is often a prerequisite for social and political empowerment.
(B) Women are not interested in economic matters.
(C) Economic resources are infinite and easily available to all.
(D) It is a topic that is easy to measure without any complexity.

214. The term 'working condition' for women in the context of gender and development would NOT include:
(A) Safety measures at the workplace.
(B) Hours of work.
(C) The color of the national flag.
(D) Provision for maternity leave.

215. The 'gender division in urban labor markets' often results in:
(A) Equal pay and opportunities for all.
(B) 'Feminization' of certain low-paid jobs and a 'glass ceiling' preventing women's promotion.
(C) Men being excluded from urban jobs.
(D) A perfect integration of men and women in all professions.

216. Which of the following best explains the 'differential impact' of environmental degradation?
(A) Environmental degradation affects every person in the exact same way.
(B) Due to their social roles and economic positions, men and women are affected differently by issues like deforestation or water scarcity.
(C) Only women are affected by environmental degradation.
(D) Environmental degradation has no impact on human populations.

217. The Gender Empowerment Measure (GEM) and similar indices aim to measure:
(A) The number of women who are happy.
(B) The relative empowerment of women and men in a country, focusing on political and economic participation.
(C) The biological fitness of women.
(D) The total population of women in a country.

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218. The study of the 'impact' of development programs for SC/ST is essentially a study of:
(A) Program evaluation from a demographic perspective.
(B) The financial audit of the programs.
(C) The political motives behind the programs.
(D) The cultural history of the communities.

219. The classification of the physically challenged population is important for:
(A) Creating social stigma.
(B) Providing targeted and appropriate aid and support.
(C) Ranking individuals in a hierarchy.
(D) Purely academic purposes with no practical application.

220. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): The reproductive health of men is an important, though often overlooked, aspect of population studies.
Reason (R): Men's health, attitudes, and behaviors have a significant impact on fertility, the spread of STIs, and overall family well-being.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

221. Which is an example of 'women's access to entitlements'?
(A) A woman's husband giving her an allowance.
(B) A law that guarantees a girl's right to primary education.
(C) A woman being allowed to watch a television show.
(D) A woman being praised for her cooking.

222. The term 'gender and poverty' suggests that:
(A) Poverty levels are identical for men and women.
(B) Gender inequality can be a major factor contributing to and exacerbating poverty for women.
(C) All women are poor and all men are rich.
(D) Poverty is a choice.

223. Consider the following statements about gender mainstreaming:
1. It is a strategy to make women's and men's concerns an integral part of all policies.
2. It aims to make gender equality a central goal of development.
3. It is applicable to various sectors, including health and education.
4. It is the opposite of creating women-specific projects.

Which of the above statements are correct?
(A) 1 and 2 only
(B) 1, 2 and 4 only
(C) 3 and 4 only
(D) 1, 2, 3 and 4

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224. 'Women's autonomy' is most closely related to which of the following concepts?
(A) Decision-making power.
(B) Dependence
(C) Subordination
(D) Isolation

225. Development plans and programmes for SC and ST in India are efforts to address:
(A) The demands of international organizations.
(B) Historical social and economic disadvantages.
(C) Overpopulation in urban areas.
(D) To provide targeted and appropriate aid and support.

226. 'Sexual debut' as a topic in adolescent health is important because:
(A) It is the most important event in an adolescent's life.
(B) The circumstances surrounding it (e.g., age, use of contraception, consent) have significant health implications.
(C) It is only a concern for boys.
(D) It has no relationship with issues like adolescent pregnancy or STIs.

227. The concept of 'vulnerability' in the context of globalization for female workers could relate to:
(A) Job insecurity in export-processing zones.
(B) Lack of social security benefits.
(C) Exposure to harassment in the workplace.
(D) All of the above.

228. Consider the following statements and choose the correct option.
Statement I: The informal sector is characterized by strong labor unions and comprehensive legal protections for workers.
Statement II: Women's heavy involvement in the informal sector often means they work without job security, benefits, or legal recourse.
(A) Both Statement I and Statement II are true.

(D) Geriatric care.

158. The concept of 'gender' was developed to:
(A) Distinguish between biological sex and the socially and culturally constructed roles assigned to males and females.
(B) Emphasize that differences between men and women are purely biological and unchangeable.
(C) Prove that men are superior to women.
(D) Argue that there are no biological differences between males and females.

159. The following question consists of two statements, Assertion (A) and Reason (R). Choose the correct option.
Assertion (A): Gender can influence migration decisions and outcomes.
Reason (R): Social norms may dictate whether men or women are expected to migrate for work, and gender relations can affect migrants' experiences and vulnerabilities in destination countries.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

160. Which is the most appropriate description of 'major morbidity and mortality burden' in developing countries?
(A) The specific set of diseases and health conditions that cause the most illness and death, which can vary by age, sex, and gender.
(B) An equal and uniform distribution of diseases across all population groups residing in a specific region.
(C) A diagnostic focus solely on rare and exotic infectious diseases prevalent within local communities.
(D) The total estimated financial cost of provided healthcare services.

161. A key challenge in 'profiling women's work' is:
(A) The lack of women in the workforce.
(B) The tendency to devalue or ignore unpaid domestic and care work.
(C) The refusal of women to participate in surveys.
(D) The simplicity and homogeneity of the work women do.

162. Consider the following statements regarding gender mainstreaming:
1. Gender mainstreaming in health means focusing only on women's diseases.
2. Gender mainstreaming in education involves creating gender-sensitive curricula.
3. Gender mainstreaming in the workplace includes policies on equal pay.
4. Gender mainstreaming in agriculture could mean improving women's access to land titles.

Which of the above statements are correct?
(A) 1, 2 and 3
(B) 2, 3 and 4
(C) 1, 3 and 4
(D) 1, 2 and 4

163. The concept of 'women's empowerment' having 'demographic implications' suggests a link between:
(A) Women's status and population trends like fertility and child mortality.
(B) Women's voting rights and election outcomes.
(C) Women's fashion choices and the textile industry.
(D) Women's literary achievements and library budgets.

164. The study of the 'size' of the physically challenged population refers to:
(A) The physical dimensions of disabled individuals.
(B) The total number of people identified as physically challenged in a given area.
(C) The political influence of the group.
(D) The size of the budget allocated for their welfare.

165. Consider the following statements and choose the correct option.
Statement I: Scheduled Castes (SC) and Scheduled Tribes (ST) are treated as a single, homogenous group with identical characteristics and distribution.
Statement II: Population analysis requires a distinct analysis of SC and ST communities,

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(B) It is a key concept in analyzing population issues.
(C) It is a fixed, biological characteristic that does not change.
(D) Its meaning can vary across cultures and history.

239. 'Reproductive health' is defined as a state of complete physical, mental and social well-being in all matters relating to the reproductive system. This implies that it is:
(A) Only about the absence of disease.
(B) Only about having children.
(C) A holistic concept that goes beyond just biology.
(D) Relevant only for women.

240. The term 'contraceptive technology' covers:
(A) Only the birth control pill.
(B) A wide range of methods from condoms and IUDs to sterilization and emergency contraception.
(C) Only male methods of contraception.
(D) Only traditional or natural methods.

241. 'Inheritance laws' are a significant gender issue because:
(A) They can be a major barrier to women's accumulation of assets and economic security.
(B) They have no impact on women's economic status.
(C) They always favor women over men.
(D) They are the same in every country.

242. 'Gender divisions in urban labor markets' is synonymous with:
(A) Occupational segregation by gender.
(B) Equal opportunity for all.
(C) The physical separation of male and female workers.
(D) The absence of men in urban jobs.

243. The differential impact of land use changes on men and women can be seen when:
(A) A new park is built that everyone can use.
(B) Common grazing lands used by women to feed livestock are converted to a cash crop plantation controlled by men.
(C) A road is built that benefits both male traders and female market-sellers.
(D) Land use patterns remain unchanged for centuries.

244. The ultimate purpose of studying the 'impact' of development programs for SC/ST is to:
(A) Find faults with the programs.
(B) Inform policy and improve the effectiveness of future interventions.
(C) Justify discontinuing the programs.
(D) Provide data for international comparison only.

245. Consider the following statements and choose the correct option.
Statement I: In population studies, 'gender' and 'women' are interchangeable terms.
Statement II: Modern analysis uses 'gender' to refer to the system of relations between men and women, while also focusing on specific issues related to women's status and empowerment.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

246. 'Women and family planning programs' is a specific topic of study because historically:
(A) These programs have disproportionately placed the responsibility of contraception on women.
(B) Men were the primary focus of these programs.
(C) Family planning was not considered important.
(D) These programs did not use any technology.

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247. The issue of 'wage differentials' between genders is a matter of:
(A) Economic inequality
(B) Social custom only
(C) Biological necessity
(D) Personal choice

248. The concept of 'agency' for women in a globalized world means that they:
(A) Are always victims of global forces.
(B) Can actively navigate, negotiate, and resist the challenges and opportunities presented by globalization.
(C) Have no role to play in the economy.
(D) Are completely isolated from global trends.

283. What is a key consequence of the increased time and energy women spend securing resources due to environmental degradation?
(A) An increase in their political participation.
(B) A reduction in opportunities for education and income generation.
(C) A significant improvement in their overall health.
(D) A shift in domestic responsibilities towards men.

284. The passage connects micro-level household dynamics with macro-level environmental issues to illustrate:
(A) The consistent and multi-level nature of the differential environmental impact on genders.
(B) That men and women are impacted in exactly the same way by their environment.
(C) That environmental degradation only affects women in urban areas.
(D) That the household environment has no connection to broader ecological changes.

285. What is the overall argument of the passage regarding environmental degradation and gender?
(A) Environmental degradation is a gender-neutral process.
(B) Men are the primary victims of all forms of environmental change.
(C) Environmental degradation exacerbates existing gender inequalities.
(D) Women are solely responsible for causing environmental degradation.

Direction : Please read the following source carefully.

Gender mainstreaming is a strategic approach aimed at integrating a gender perspective into the preparation, design, implementation, monitoring, and evaluation of all policies and programmes. The ultimate goal is to ensure that both men and women benefit equally and that inequality is not perpetuated. This concept is applied across various health and development sectors, including agriculture, education, and employment in both public and private workplaces. Parallel to this strategy is the focus on addressing gender inequality and enhancing the status of women. This inequality manifests across social, economic,cultural, and health domains, and can include severe forms like domestic violence. A key lever for change is the promotion of women's autonomy and empowerment, which refers to their ability to make strategic life choices and act on them. This empowerment has significant demographic implications, as it is often linked to lower fertility rates, improved child health, and overall family well-being. To quantify progress in this area, composite indices like the Gender Empowerment Measure (GEM) were developed. GEM specifically focuses on measuring gender inequality in key areas of economic and political participation and decision-making, capturing disparities in political representation, professional positions, and earned income.

Based on the above source, attempt the following five questions.

286. What is the primary objective of the gender mainstreaming strategy described in the passage?
(A) To create separate programs exclusively for women.
(B) To focus development efforts only on the health sector.
(C) To measure gender inequality using a single indicator.
(D) To ensure policies and programmes do not perpetuate gender inequality.

287. The passage suggests that women's empowerment has which of the following demographic implications?
(A) An increase in overall fertility rates.
(B) A deterioration in child health outcomes.
(C) A link to lower fertility and improved family well-being.
(D) No significant effect on population parameters.

288. According to the source, the Gender Empowerment Measure (GEM) is designed to measure:
(A) The overall happiness and life satisfaction of women.
(B) Gender inequality in economic and political participation and decision-making.
(C) The prevalence of domestic violence across different cultures.
(D) The level of women's access to primary

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255. Why is the distinction between sex and gender considered a foundational analytical tool in population studies?
(A) It helps in accurately counting the number of males and females in a population.
(B) It provides a basis for enforcing traditional roles within family structures.
(C) It allows for an analysis of social phenomena beyond simple biological classifications.
(D) It focuses research exclusively on the biological aspects of reproduction.

Direction : Please read the following source carefully.

Gender as an analytical category profoundly intersects with the core components of population dynamics: age-sex structure, fertility, mortality, and migration. The relationship is not unidirectional; just as these components are shaped by gender norms, they also reinforce or challenge existing gender relations. For instance, the age-sex structure of a population can be significantly skewed by gender-biased practices such as sex-selective abortion and female infanticide, reflecting a strong societal preference for male children. In terms of fertility, gender relations heavily influence reproductive decision-making, access to contraception, and the desired number and spacing of children, with women's autonomy being a critical determinant. Mortality differentials between genders are also pronounced, often stemming from gender-specific health risks, occupational hazards, and unequal access to healthcare. Men may face higher mortality from accidents and lifestyle-related diseases linked to notions of masculinity, while women may be more vulnerable to maternal mortality. Furthermore, migration patterns are deeply gendered; men and women often migrate for different reasons, through different channels, and face different risks and opportunities in their destinations. Understanding these intricate relationships is essential for a comprehensive analysis of population change and for designing effective and equitable population policies.

Based on the above source, attempt the following five questions.

256. Which of the following best describes the relationship between gender and population components as presented in the passage?
(A) Population components solely determine the gender norms of a society.
(B) Gender norms and population components mutually influence each other.
(C) Gender norms have a negligible impact on population dynamics.
(D) Population components are independent of the socio-cultural context of gender.

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257. According to the passage, a skewed age-sex structure in a population can be a direct consequence of which gender-related factor?
(A) Higher female life expectancy.
(B) Gender-neutral migration patterns.
(C) Equal access to healthcare for all genders.
(D) Societal preference for male offspring.

258. What factor is highlighted in the passage as a critical determinant of fertility outcomes?
(A) The degree of women's autonomy in decision-making.
(B) The level of male out-migration.
(C) The prevalence of gender-neutral inheritance laws.
(D) The average age at marriage for men.

259. The passage suggests that gender-differentiated mortality can be attributed to:
(A) Only biological differences between men and women.
(B) Uniform exposure to health risks for both genders.
(C) Gender-specific health risks and unequal healthcare access.
(D) Equal access to healthcare services across the population.

260. Based on the passage, what can be inferred about gender and migration?
(A) The motivations, methods, and experiences of migration differ between genders.
(B) Men and women migrate for identical reasons and face similar outcomes.
(C) Migration is a process that is not influenced by gender roles.
(D) Women are always more likely to migrate than men.

Direction : Please read the following source carefully.

In the developing world, particularly with a

focus on India, the burden of morbidity and mortality is significantly shaped by gender. A critical indicator of this disparity is the sex ratio at birth, which often deviates from the natural norm due to sex-selective practices, pointing to a deep-seated devaluation of females. Women experience a unique set of major health problems, many of which are linked to their reproductive role, including high rates of maternal mortality and morbidity. The reproductive health of both women and men in the developing world is a major concern, yet the focus and outcomes differ. For women, issues revolve around safe childbirth, access to care, and management of reproductive tract infections. For men, reproductive health issues, though less discussed, are also significant. A key aspect of this gendered health landscape is the differential in the use of male and female methods of contraception. Female-centric methods, such as sterilization and hormonal pills, are far more prevalent than male methods like vasectomy and condoms. This disparity reflects underlying gender power dynamics, where the responsibility for family planning is disproportionately placed on women, often without their full autonomy in decision-making, which in turn has profound implications for their overall health and well-being.

Based on the above source, attempt the following five questions.

261. What does a skewed sex ratio at birth in the developing world primarily indicate, according to the passage?
(A) A natural biological anomaly in certain populations.
(B) The success of family planning programs.
(C) Higher natural mortality rates for male infants.
(D) The societal devaluation of females leading to sex-selective practices.

262. The passage suggests that the major health problems experienced by women in the developing world are often linked to:
(A) Their higher participation in the formal workforce.
(B) Their reproductive roles and related health issues.
(C) Genetic predispositions found exclusively in females.
(D) Lifestyle choices similar to those of men in developed countries.

263. According to the source, what does the differential in the use of contraceptive methods between men and women reflect?
(A) The greater biological suitability of female bodies for contraception.
(B) A lack of available contraceptive technologies for men.
(C) Underlying gender power imbalances in reproductive responsibilities.
(D) A conscious and equal choice made by couples.

264. Which of the following is NOT mentioned in the passage as a major health concern for women in the developing world?
(A) Maternal mortality.
(B) Reproductive tract infections.
(C) Issues related to safe childbirth.
(D) Accidents related to high-risk occupations.

265. What can be inferred about the responsibility for family planning based on the contraceptive use patterns described?
(A) It is disproportionately placed upon women.
(B) It is shared equally between men and women.
(C) It is primarily shouldered by the state and health institutions.
(D) It is increasingly being taken up by men.

Direction : Please read the following source carefully.

The adolescent period is marked by specific health and nutrition issues that are often gender-differentiated. Both adolescent boys and girls face challenges such as nutritional deficiencies, but they can be vulnerable to abuse and maltreatment in distinct ways. The onset of puberty introduces significant physiological and psychological changes, leading to issues surrounding sexual debut. For adolescent girls, this period can be particularly fraught with risk, including the possibility of adolescent pregnancy and unsafe abortion, which have severe health and social consequences. The approach to women and family planning programs often needs to consider these early life experiences and the availability of appropriate contraceptive

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technology for young people. Concurrently, a critical but often overlooked area is the major risk factors contributing to men's health problems, many of which are rooted in societal constructs of masculinity. Behaviors such as alcoholism, tobacco and drug consumption are frequently higher among men, seen as part of a masculine identity. This, combined with a greater propensity for risk-taking, leads to a higher incidence of accidents. These factors constitute significant, preventable health burdens that begin to manifest in adolescence and continue into adulthood, contributing to gender differentials in morbidity and mortality.

Based on the above source, attempt the following five questions.

266. According to the passage, which issue is highlighted as a particularly severe risk for adolescent girls following their sexual debut?
(A) Nutritional deficiencies.
(B) Adolescent pregnancy and unsafe abortion.
(C) Abuse and maltreatment in the workplace.
(D) Increased propensity for risk-taking behavior.

267. The passage links major risk factors for men's health, such as alcoholism and tobacco use, to which of the following?
(A) Biological predispositions exclusive to males.
(B) Societal constructs of masculinity.
(C) The failure of family planning programs.
(D) The lack of available contraceptive technology for men.

268. What does the passage imply about the health challenges faced by adolescents?
(A) They are often differentiated along gender lines.
(B) They are identical for both boys and girls.
(C) They are primarily related to genetic factors.
(D) They are limited to psychological changes during puberty.

269. The passage suggests that a higher incidence of accidents among men is related to:
(A) Their overrepresentation in safe, office-based jobs.
(B) A biological inability to assess danger.
(C) A greater propensity for risk-taking associated with masculine identity.
(D) The physiological changes that occur during puberty.

270. Which of the following is presented as a challenge for both adolescent boys and girls?
(A) Adolescent pregnancy.
(B) Unsafe abortion.
(C) High rates of alcoholism.
(D) Nutritional deficiencies.

Direction : Please read the following source carefully.

The gender dimension of economic development is profoundly evident in women's differential access to economic resources and entitlements. Structural barriers often limit women's ability to claim land ownership and benefit from inheritance laws, which are frequently biased towards male heirs. This lack of asset ownership is compounded by restricted access to credit, hindering their entrepreneurial potential. A significant challenge in understanding women's economic contribution lies in the measurement of their work. A vast amount of labor performed by women, particularly in domestic and caregiving roles, remains uncounted in formal economic statistics. When women do participate in the market economy, they are often concentrated in the informal sector, which is characterized by precarious working conditions, low pay, and a lack of social security, including maternity benefits. Even within the formal sector, persistent wage differentials between men and women for work of equal value are common. This combination of limited access to resources, undervaluation of their labor, and unfavorable working conditions culminates in the phenomenon of 'gender and poverty,' where women and female-headed households are disproportionately represented among the world's poor. Addressing these economic disparities is thus a critical component of both gender equality and sustainable development.

Based on the above source, attempt the following five questions.

271. According to the passage, what is a primary reason for the underestimation of women's economic contribution?
(A) Women's preference for part-time employment.

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(B) Document their population size for census purposes only.
(C) Reduce the socio-economic disparities between them and the general population.
(D) Encourage higher population growth rates within these communities.

Direction : Please read the following source carefully.

The disabled or physically challenged population constitutes another special group requiring focused attention in population studies and policy-making. A primary challenge is the accurate determination of their size, growth, and distribution in India, as data collection can be complex and definitions may vary. For policy and planning purposes, a systematic classification of the physically challenged population is essential. This classification is typically based on the type of impairment, such as visual, hearing, locomotor, or intellectual disabilities, among others. In response to the unique challenges faced by this group, the Indian government has initiated various development plans and programmes. These initiatives are broadly aimed at the welfare, rehabilitation, and socio-economic empowerment of persons with disabilities. Key objectives include providing access to education, healthcare, and assistive devices; promoting skill development and employment opportunities; and ensuring a barrier-free environment to facilitate their full participation in society. The scope of these programmes is comprehensive, seeking not just to provide aid but to foster independence and integration, thereby improving the overall quality of life for the physically challenged population and ensuring their rights are protected.

Based on the above source, attempt the following five questions.

296. What is mentioned in the passage as a primary challenge related to the disabled population in India?
(A) The refusal of the population to participate in any government programmes.
(B) The lack of any classification system for different types of disabilities.
(C) An overabundance of funding for development plans.
(D) The accurate determination of their size, growth, and distribution.

297. The classification of the physically challenged population is essential for which purpose?
(A) For effective policy and programme planning.
(B) To segregate them from the rest of society.
(C) To limit their access to public services.
(D) To rank disabilities in a hierarchy of severity.

298. According to the passage, the development programmes for the physically challenged population aim to:
(A) Provide long-term institutional care for all disabled individuals.
(B) Promote their welfare, rehabilitation, and empowerment.
(C) Focus solely on providing financial handouts.
(D) Limit their participation in mainstream society to avoid risks.

299. Which of the following is listed as an objective of the development plans for the disabled?
(A) Discouraging the use of assistive devices.
(B) Ensuring a barrier-free environment.
(C) Limiting their access to education and healthcare.
(D) Promoting their dependence on family members.

300. What is the ultimate goal of the comprehensive programmes for the physically challenged, as implied by the passage?
(A) To foster independence and full participation in society.
(B) To provide basic welfare without promoting integration.
(C) To focus exclusively on medical rehabilitation.
(D) To document the population for statistical purposes only.

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(A) A focus solely on the negative consequences for women.
(B) The assumption that women are passive victims of economic change.
(C) A disregard for the gender divisions in urban labor markets.
(D) An acknowledgment of women's agency and negotiation of power.

278. According to the source, how are gender divisions manifested in urban labor markets under globalization?
(A) Through the equal distribution of high-wage jobs between men and women.
(B) Through the disproportionate employment of women in low-wage, insecure jobs.
(C) Through the overrepresentation of women in secure, formal sector employment.
(D) Through the complete exclusion of men from the urban labor force.

279. What is the relationship between gender and migration in the context of globalization as described in the passage?
(A) Migration patterns have become entirely gender-neutral.
(B) Only men migrate for economic reasons, while women migrate for family reunification.
(C) Women are migrating in increasing numbers for economic reasons, facing both empowerment and exploitation.
(D) Globalization has led to a significant decrease in female migration.

280. The passage uses the term "dual-edged nature" to describe globalization's impact. This implies that the process is:
(A) Unfailingly positive.
(B) Entirely negative.
(C) Simple and straightforward.
(D) Complex, with both beneficial and detrimental aspects.

Direction : Please read the following source carefully.

The immediate living environment, encompassing housing and the household, has a differential impact on the lives of men and women, largely mediated by their socially constructed roles. The quality of housing, including factors like overcrowding, sanitation, and access to clean water and energy, disproportionately affects women, who typically bear the primary responsibility for domestic chores and caregiving. Poor household environments can increase their labor burden and expose them to greater health risks. This micro-level dynamic is mirrored at the macro level with the issue of environmental degradation. Changes in the broader environment, such as a falling water table, deforestation, or land use alterations driven by climate change, impose a heavier burden on women, particularly in rural and resource-dependent communities. As traditional collectors of water, fodder, and fuelwood, women are forced to travel longer distances and spend more time and energy securing these basic necessities. This not only impacts their health and time but also reduces their opportunities for education, income generation, and social participation. Consequently, the differential impact of environmental degradation is a critical aspect of gender inequality, exacerbating existing vulnerabilities and reinforcing traditional gender roles.

Based on the above source, attempt the following five questions.

281. According to the passage, why does the quality of the household environment disproportionately affect women?
(A) Because women are typically responsible for domestic and caregiving tasks.
(B) Because men are biologically more resilient to poor sanitation.
(C) Because women spend less time within the household than men.
(D) Because housing policies are explicitly designed to disadvantage women.

282. The passage suggests that a falling water table and deforestation have a more severe impact on rural women because:
(A) They are less concerned about environmental conservation than men.
(B) They are traditionally responsible for collecting water and fuelwood.
(C) Men in rural areas are not affected by these environmental changes.
(D) These changes lead to an increase in their income-generating opportunities.

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249. "Gender mainstreaming in the workplace" would most likely involve:
(A) Ensuring all senior managers are men.
(B) Discouraging women from joining the workforce.
(C) Creating policies to address pay gaps, harassment, and promote work-life balance for all employees.
(D) Providing different salary scales for men and women doing the same job.

250. The study of the 'size, growth and distribution' of the disabled population helps in:
(A) Planning for required infrastructure, healthcare, and educational facilities.
(B) Socially excluding the disabled population.
(C) Proving that disability is not a demographic issue.
(D) Estimating the number of hospitals in a country.

Direction : Please read the following source carefully.

The concept of gender is fundamentally a social and cultural construct, distinct from the biological determination of sex. While sex refers to the physiological differences between males and females, gender pertains to the socially ascribed roles, responsibilities, opportunities, and constraints associated with being male or female in a given society. The evolution of gender in historical perspective reveals a transition from largely rigid, patriarchal systems, where roles were strictly defined and enforced, to more fluid and contested understandings in contemporary times. Historically, these constructs have been instrumental in shaping social hierarchies, power relations, and individual identities. The meaning of gender is not static; it is continually negotiated and redefined through social, political, and cultural processes. This dynamic nature means that what is considered masculine or feminine can vary significantly across cultures and over time. Understanding this evolution is crucial for analyzing how gender ideologies have influenced, and continue to influence, everything from family structures and economic participation to legal rights and political representation. The distinction between sex and gender is therefore a foundational analytical tool in population studies, allowing for a deeper examination of social phenomena beyond mere biological categorizations.

Based on the above source, attempt the following five questions.

251. According to the passage, what is the primary distinction between 'sex' and 'gender'?
(A) Sex is a historical concept, whereas gender is a contemporary one.
(B) Sex refers to biological differences, whereas gender is a socio-cultural construct.
(C) Sex is determined by social ascription, whereas gender is based on physiological traits.
(D) Sex is a static category, whereas gender is universally uniform across cultures.

252. What does the passage imply about the historical evolution of gender roles?
(A) They have moved from a state of rigidity towards greater fluidity.
(B) They have always been fluid and subject to individual choice.
(C) They have consistently become more restrictive over time.
(D) They were historically egalitarian before becoming patriarchal.

253. Which of the following statements can be inferred from the passage regarding the meaning of gender?
(A) The meaning of gender is biologically predetermined and unchangeable.
(B) The meaning of gender is uniform across all societies and historical periods.
(C) The meaning of gender is dynamic and subject to change through societal processes.
(D) The meaning of gender is exclusively defined by economic factors.

254. The passage suggests that gender constructs have been instrumental in shaping which of the following?
(A) Biological evolution and genetic diversity.
(B) Climatic patterns and geographical landscapes.
(C) Universal moral principles and ethical codes.
(D) Social hierarchies and power relations.

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education only.

289. The concept of "women's autonomy and empowerment" in the passage refers to their ability to:
(A) Adhere strictly to traditional gender roles.
(B) Rely completely on male family members for decisions.
(C) Withdraw from all economic and political activities.
(D) Make and act upon strategic life choices.

290. In which sectors does the passage state that gender mainstreaming is applied?
(A) In a variety of sectors including agriculture, health, and education.
(B) Only in the health sector.
(C) Only in private workplaces.
(D) Exclusively in government policy-making bodies.

Direction : Please read the following source carefully.

Special population groups, such as Scheduled Castes (SC) and Scheduled Tribes (ST) in India, present unique demographic and developmental profiles. The analysis of these groups involves examining their size, growth rates, population composition, and distinct patterns of distribution across the country. Historically, both SC and ST communities have faced significant social and economic marginalization. In response, the Indian state has formulated specific development plans and programmes aimed at their upliftment and integration into the national mainstream. These interventions are designed to address historical injustices and improve their socio-economic indicators. The impact of these programmes on the population characteristics of SC and ST communities is a critical area of study. This involves assessing changes in literacy rates, health outcomes (such as infant mortality and life expectancy), economic participation, and social mobility. Evaluating the effectiveness of these development plans requires an analysis of whether they have successfully altered demographic trends and reduced the disparities between these groups and the general population. The outcomes of such programmes can vary, showing progress in some areas while persistent challenges remain in others, necessitating continuous policy review and adaptation.

Based on the above source, attempt the following five questions.

291. According to the passage, what is a key reason for the formulation of special development plans for SC and ST communities?
(A) To study their unique cultural practices for academic purposes.
(B) To encourage their geographical concentration in specific states.
(C) To address their historical social and economic marginalization.
(D) To maintain their separation from the general population.

292. The passage indicates that the analysis of SC and ST populations includes which of the following aspects?
(A) Their size, growth, composition, and distribution.
(B) Their political affiliations and voting patterns.
(C) Their international migration trends.
(D) Their influence on global economic policies.

293. Evaluating the impact of development programmes for SC and ST communities involves assessing changes in:
(A) Their traditional religious beliefs.
(B) Their linguistic diversity.
(C) Their dietary habits and cuisine.
(D) Their literacy rates and health outcomes.

294. What can be inferred from the passage about the outcomes of the development plans for SC and ST groups?
(A) They have been uniformly successful across all regions and indicators.
(B) Their effectiveness is mixed, with both progress and persistent challenges.
(C) They have had no measurable impact on their population characteristics.
(D) They have been officially discontinued due to a lack of results.

295. The ultimate goal of the development plans and programmes for SC and ST communities, as implied by the passage, is to:
(A) Preserve their traditional economic systems without change.

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(B) Women's lower productivity in the formal sector.
(C) The exclusion of unpaid domestic and care work from formal economic measurements.
(D) The equal distribution of wages between men and women.

272. Which of the following is identified as a structural barrier limiting women's economic advancement?
(A) Universal access to credit and financial services.
(B) Restricted land ownership and biased inheritance laws.
(C) Gender-neutral inheritance laws and land rights.
(D) A high concentration of women in high-paying formal sector jobs.

273. The passage describes the informal sector as being characterized by:
(A) High wages, job security, and comprehensive maternity benefits.
(B) Equal representation of men and women in leadership roles.
(C) Favorable working conditions and strong labor protections.
(D) Precarious conditions, low pay, and a lack of social security.

274. The term 'gender and poverty' as used in the passage refers to:
(A) The disproportionate representation of women among the poor due to economic disparities.
(B) The equal distribution of poverty across both genders.
(C) The idea that poverty is exclusively a women's issue.
(D) A situation where men are more likely to be in poverty than women.

275. What does the passage suggest about wage differentials?
(A) They have been completely eliminated in the formal sector.
(B) They are a result of women voluntarily choosing lower-paying jobs.
(C) They exist even when men and women perform work of equal value.
(D) They are only prevalent in the informal economic sector.

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Direction : Please read the following source carefully.

Globalization has instigated profound shifts in the patterns of economic activity, creating a complex and often contradictory impact on gender dynamics. While it can open new avenues for employment, particularly for women in sectors like textiles and information technology, it simultaneously introduces issues of marginalization and vulnerability. The competitive pressures of the global market can lead to informalization of labor, where women are disproportionately employed in low-wage, insecure jobs with poor working conditions. This creates a sharp gender division in urban labor markets. However, this narrative of vulnerability is incomplete without acknowledging the concurrent emergence of women's agency, negotiation, and the creation of new spaces of power. Women are not passive victims; they actively navigate these new economic landscapes, negotiate their roles within the family and community, and sometimes leverage their economic participation to gain greater autonomy. Gender and migration are also intrinsically linked within this global context, with women migrating for economic reasons in increasing numbers. This process can be empowering, but it also exposes them to new forms of exploitation, highlighting the dual-edged nature of globalization's impact on gender relations and the need for a nuanced analysis that considers both structural constraints and individual agency.

Based on the above source, attempt the following five questions.

276. What does the passage suggest is a dual impact of globalization on women?
(A) It creates both new economic opportunities and new forms of marginalization.
(B) It universally leads to empowerment and eliminates all forms of marginalization.
(C) It exclusively results in increased vulnerability and has no positive effects.
(D) It reinforces traditional gender roles by keeping women out of the labor market.

277. The passage argues that a complete analysis of globalization's impact on gender must include:

ANSWERS

1. (B) The socially constructed roles, behaviors, activities, and attributes that societies consider appropriate.
Gender refers to the characteristics of women, men, girls, and boys that are socially constructed. This includes norms, behaviors, and roles associated with being a woman, man, girl, or boy, as well as relationships with each other. As a social construct, gender varies from society to society and can change over time. It is a fundamental category of analysis in population studies to understand demographic outcomes.

2. (A) Gender-based preferences for sons can skew the age-sex structure, particularly in younger age groups.
Societal values and preferences regarding the sex of children have a direct impact on the demographic makeup of a nation. In many regions, the desire for male heirs leads to practices that result in a disproportionate number of boys being born or surviving early childhood. This skewing of the sex ratio at younger ages alters the population pyramid, creating significant long-term social and demographic challenges.

3. (A) P-2, Q-1, R-3, S-4
Population studies rely on precise definitions of various social and biological metrics to analyze demographic trends effectively. This involves distinguishing between biological attributes and socially constructed roles while measuring specific ratios such as births by sex. Furthermore, modern development strategies emphasize the integration of gender perspectives into all policy frameworks to ensure equitable outcomes for all individuals within the society, regardless of their biological or social identity.

4. (D) Statement I is false, but Statement II is true.
Gender roles are dynamic and undergo significant changes as societies evolve through different historical periods and cultural shifts. While some may assume these roles are static, historical analysis demonstrates that the concepts of masculinity and femininity are fluid and vary across different civilizations. Understanding this evolution is crucial for recognizing how social expectations are constructed and how they influence the demographic behavior of populations over time.

5. (C) Geological formations
Demographic components such as birth rates, death patterns, and the movement of people are deeply influenced by social constructs and gender dynamics. These factors determine access to healthcare, economic opportunities, and reproductive choices, which in turn shape population trends. In contrast, physical features of the earth, such as rock structures and landscape development, are governed by natural physical processes and remain unaffected by human social roles.

6. (A) Both A and R are true and R is the correct explanation of A.
In many developing nations, women face a disproportionate health burden due to systemic social and economic inequalities. Gender-based discrimination often manifests as reduced access to nutritious food and essential medical services, while increasing the risk of exposure to various forms of violence. These factors combine to create significant patterns of illness and higher mortality rates among women, highlighting the link between social status and health.

7. (D) Complications from pregnancy and childbirth.
Reproductive health remains a critical concern for women in the developing world, where access to quality maternal care is often limited. Complications arising during pregnancy and delivery contribute significantly to the overall burden of disease and mortality for women in these regions. Addressing these issues requires improved healthcare infrastructure, better nutrition, and empowered decision-making regarding family planning to ensure safer outcomes for both mothers and children.

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8. (A) The major morbidity and mortality burden on women.
Policies that provide essential nutritional supplements to pregnant women are designed to mitigate specific health risks associated with maternal mortality and illness. Anemia and nutritional deficiencies are prevalent issues that can lead to severe complications during childbirth. By targeting these biological needs, health programs aim to reduce the high rates of illness and death among women, thereby improving the overall demographic health profile of the community.

9. (C) 1, 3 and 4 only
The sex ratio at birth is influenced by both biological expectations and social interventions. While a natural biological tilt towards male births exists, cultural preferences for sons can lead to the use of medical technologies to influence the sex of offspring. An abnormally high ratio of male to female births is typically a strong indicator of gender bias and son preference, which significantly impacts long-term population structures.

10. (A) Male sterilization (vasectomy) is more popular and widely used than female sterilization (tubectomy) in India.
Contraceptive use often reflects deep-seated gender imbalances, where the responsibility for family planning frequently falls disproportionately on women. In many societies, female-controlled methods, including sterilization, are utilized at much higher rates than male-controlled options. This trend highlights disparities in health seeking behavior and the social pressures that influence reproductive choices, often leaving women to bear the primary burden of preventing pregnancy and managing family size.

11. (D) Iron-deficiency anemia due to menstruation and poor diet.
Adolescent girls in developing regions face specific nutritional challenges that significantly impact their long-term health and development. The combination of biological processes, such as the onset of menstruation, and inadequate dietary intake often leads to high rates of iron-deficiency anemia. This condition can cause fatigue, reduced cognitive function, and increased vulnerability to illness, making it a primary focus for public health interventions targeting this specific demographic group.

12. (A) 2, 1, 3, 4
Adolescent development typically follows a logical sequence of biological and social milestones that shape an individual's transition into adulthood. This progression begins with the physical changes of puberty, followed by the initiation of sexual activity. In many traditional contexts, these events may lead to pregnancy and subsequent marriage. Understanding this chronological order is essential for designing effective health and social policies that address the unique needs of adolescents.

13. (C) The cause is a significant contributing factor to the effect.
Socially constructed ideals of masculinity often promote behaviors that involve high levels of risk and physical bravado. These expectations can lead men to engage in dangerous activities or adopt lifestyle habits that negatively affect their health, such as substance use or reckless driving. Consequently, these gendered behaviors serve as significant factors that contribute to higher rates of accidental death and chronic disease among the male population in many societies.

14. (D) The legal and social rights to access and use resources, such as food, education, and healthcare.
In the context of economic development, entitlements encompass the various rights and social arrangements that enable individuals to command essential resources for their well-being. This includes the ability to access food, receive an education, and obtain necessary medical care. When gender inequalities exist, women may have fewer entitlements than men, which restricts their capability to participate fully in the economy and achieve a higher standard of living.

15. (B) P-2, Q-1, R-3, S-4
Economic and legal structures often contain inherent gender biases that manifest in various systemic inequalities within society. These dimensions include disparities in inheritance laws that favor male heirs, pay gaps for similar work, and the level of protection offered to workers during maternity. Additionally, a

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significant portion of the workforce, particularly women, often operates in unregulated informal sectors without social security, highlighting the need for comprehensive gender-sensitive policies.

16. (B) Tobacco and drug consumption : Risk factors often linked to social pressures on men.
Men's health outcomes are frequently influenced by social expectations that encourage specific lifestyle choices and behaviors. Pressures to conform to certain ideals of masculinity can lead to increased consumption of tobacco and other substances as a way to demonstrate toughness or cope with stress. These behavioral patterns are not merely individual choices but are often rooted in the social and cultural environment that shapes male identity and health risks.

17. (D) Statement I is false, but Statement II is true.
Globalization is a complex process with varied impacts on different segments of the population. While it can create new opportunities for some, it frequently leads to increased vulnerability for others, particularly women in low-skilled sectors. Many women find themselves concentrated in informal or precarious jobs with little security or legal protection. This reality challenges the notion of uniform benefit and highlights how global economic shifts can reinforce existing gender inequalities.

18. (A) Both A and R are true and R is the correct explanation of A.
Conventional economic statistics often fail to capture the full extent of women's labor because a significant portion of their work occurs outside the formal market. Activities such as unpaid domestic chores, caregiving, and subsistence farming are frequently excluded from national accounts. This omission makes measuring women's total economic contribution complex and difficult, particularly in developing economies where informal and household-based labor is a primary source of sustenance and survival.

19. (C) The segregation of jobs, where certain occupations are considered 'male' and others 'female'.
Urban labor markets are often characterized by a distinct division where specific roles and professions are socially categorized based on gender. This segregation leads to "male-dominated" and "female-dominated" sectors, which often differ in terms of pay, status, and job security. Such divisions are not based on biological capability but on cultural stereotypes that dictate which types of work are appropriate for men versus women, limiting economic mobility and equality.

20. (B) 1, 4 and 5 only
Economic development is closely linked to the status and participation of women within the workforce and society. Key indicators include their ability to access and control economic resources, the visibility of their contributions through comprehensive work profiling, and the provision of essential benefits like maternity leave. Recognizing these factors is necessary for creating a more equitable economic environment and ensuring that the developmental process benefits all members of the population.

21. (C) Women's access to credit.
Empowering women through financial literacy and micro-loans directly addresses systemic barriers to economic independence. In many communities, women lack the collateral or social standing required to access traditional banking services. Self-help groups and micro-finance initiatives provide a vital pathway for women to secure the capital needed to start small businesses, manage household finances, and increase their overall decision-making power within the family and the broader community.

22. (B) Climate change : Equal impact on men and women in all socio-economic contexts.
Environmental changes do not affect all individuals equally, as social roles often dictate the level of vulnerability to resource depletion. Because women are frequently responsible for gathering water and fuel in many rural societies, they bear a disproportionate burden when environmental degradation occurs. Climate change impacts are mediated by these existing gender roles, making it essential to analyze environmental issues through a gendered lens to understand the true social consequences.

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needs of the disabled population in both rural and urban areas of India.

38. (B) An analysis of how concepts of male and female roles have been constructed and have changed through different historical periods.
Examining gender through a historical lens involves investigating how social expectations and power relations between sexes have shifted over time. It recognizes that what it means to be a man or a woman is not fixed but is shaped by the social, economic, and political context of different eras. This perspective helps researchers understand that current gender norms are the result of long-term processes and can continue to evolve in the future.

39. (A) P-1, Q-3, R-2, S-4
Health risks and nutritional deficiencies often follow distinct patterns based on age and gender roles within a society. Adolescents face specific challenges related to pregnancy and nutritional needs, while men may experience higher rates of issues linked to certain lifestyle behaviors. Understanding these targeted impacts is essential for public health planning, as it allows for the development of interventions that address the most prevalent and severe health problems faced by each demographic group.

40. (D) Statement I is false, but Statement II is true.
While fertility involves biological processes, it is profoundly influenced by the social and economic environment in which people live. Gender dynamics, particularly women's levels of education and their ability to make independent decisions, show a strong correlation with reproductive outcomes. When women have more autonomy and better access to opportunities, they often choose to have fewer children. This demonstrates that social status is a key driver of fertility levels within any given population.

41. (C) The cause has complex and sometimes contradictory effects.
The movement of women for employment often leads to a multifaceted set of outcomes that can be both empowering and challenging. While migration can provide women with increased financial independence and a greater voice within their families, it can also expose them to risks of abuse or exploitation in unfamiliar environments. These varied experiences highlight that social phenomena like migration do not have simple, uniform consequences but are shaped by a wide range of factors.

42. (C) A is true but R is false.
Significant deviations in the sex ratio at birth from the natural biological norm are often observed in certain regions, indicating an imbalance that goes beyond natural variation. These distortions are frequently the result of social practices and a strong preference for male children, which may involve the use of technology to select the sex of the offspring. Recognizing these patterns is essential for understanding the social forces that shape demographic trends and for addressing underlying gender biases.

43. (D) The reproductive health of men is not a relevant topic in the developing world.
Reproductive health is a comprehensive concept that concerns the well-being of both men and women throughout their lives. It involves ensuring access to information and a wide range of safe and effective contraceptive methods. While much attention is often focused on maternal health, the attitudes and behaviors of men are equally important for family planning and the prevention of diseases. Ignoring men's roles and needs limits the effectiveness of reproductive health programs globally.

44. (B) The reproductive health of men.
Engaging men in conversations about family planning is a key strategy for improving reproductive health outcomes for both individuals and families. These programs recognize that men's cooperation and understanding of contraception are essential for effective decision-making and shared responsibility. By providing education and services tailored to men, health initiatives can address their specific needs and encourage behaviors that support the overall well-being and health of the community, fostering a more inclusive approach to healthcare.

45. (B) 1, 3 and 4 only
Adolescence is a period marked by unique physical and social challenges that require careful attention from health and social services. Both boys and girls experience developmental changes that can be influenced by their environment,

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children. This connection demonstrates that social empowerment is not just a matter of justice but also a crucial factor in driving sustainable demographic transitions and improving community health.

31. (A) The government has implemented specific development plans and programmes for the SC and ST communities.
Recognizing the historical disadvantages faced by certain social groups, the Indian government has established targeted initiatives to promote their social and economic welfare. These programs for Scheduled Castes and Scheduled Tribes focus on improving access to education, healthcare, and livelihood opportunities. Because these communities are not evenly distributed and face unique challenges, specific planning is required to address their needs and monitor the resulting changes in their demographic and socio-economic status.

32. (B) Bring about their social and economic upliftment and assess the impact on their population dynamics.
Developmental programs for marginalized communities are primarily aimed at reducing systemic inequalities and fostering inclusion in the mainstream economy. By providing resources and opportunities, these initiatives seek to improve the standard of living and health of these groups. A key part of this process is analyzing how such social and economic changes influence demographic factors like fertility, mortality, and migration, thereby helping to refine future policies and support systems.

33. (A) 1, 4, 2, 3
The process of social empowerment often triggers a logical sequence of changes that eventually impact population trends. It typically begins with improving access to education, which subsequently leads to a higher age at marriage and increased participation in the formal labor force. These shifts in social and economic roles provide individuals with greater control over their lives, ultimately resulting in lower fertility rates as reproductive choices are made more autonomously and intentionally.

34. (A) Economic base and security.
Granting land titles to indigenous and tribal communities is a fundamental step toward ensuring their long-term stability and economic independence. Secure land rights provide a reliable base for agriculture and resource management, which are central to the livelihoods of these groups. By formalizing their connection to the land, such policies help protect them from displacement and provide a foundation for future development, ultimately strengthening their economic security within their traditional environments.

35. (C) People with long-term physical, mental, intellectual, or sensory impairments.
In population studies, the term physically challenged refers to individuals who live with enduring impairments that may hinder their full and effective participation in society on an equal basis with others. This category includes a diverse range of conditions affecting physical movement, cognitive functions, and sensory perceptions. Understanding the size and needs of this population group is essential for designing inclusive policies and providing the necessary support services for their well-being.

36. (C) 1, 3 and 5
The study of individuals with disabilities is a vital part of demographic analysis, focusing on the size, growth, and geographical distribution of this group. Official classifications are used to categorize different types of impairments, which allows for the creation of targeted development plans and support programs. Recognizing this population as a special category ensures that their unique needs are accounted for in national planning, fostering a more inclusive and representative society for everyone.

37. (C) The study of the disabled population includes understanding its size, growth, and distribution.
Comprehensive demographic research involves analyzing all segments of society, including those with physical or mental impairments. Understanding the total number of people with disabilities, how this group is growing over time, and where they are located is crucial for effective policy-making. This data enables the government to allocate resources efficiently and design rehabilitation programs that meet the specific

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environment to shape the health and well-being of individuals within a household.

53. (A) Both A and R are true and R is the correct explanation of A.
Environmental degradation often has a disproportionate effect on women, especially in rural areas where they are the primary collectors of essential resources like water and fuel. As these resources become scarce, women must spend more time and energy on these tasks, which can negatively affect their health and limit their participation in other activities. This direct dependence on the natural environment makes them more vulnerable to the consequences of resource depletion and climate change.

54. (B) Reviewing textbooks to remove gender stereotypes and portrayals.
Ensuring equality in education involves more than just enrollment; it requires a critical look at the content and environment of learning. By removing gender stereotypes from textbooks, educational systems can promote more diverse and fair representations of what both men and women can achieve. This is a key part of gender mainstreaming, as it aims to create a learning experience that supports the potential of all students regardless of their gender, fostering a more inclusive society.

55. (D) The average height of women compared to men.
Indices designed to measure gender empowerment focus on indicators related to the social, political, and economic status of women relative to men. This includes their representation in government, their presence in high-level professional roles, and their overall share of national income. These metrics are used to evaluate how much power and influence women have in the public sphere. Biological traits like height are not used, as they do not reflect the social or economic status of the population.

56. (A) 1 and 3 only
The status of women is influenced by a combination of economic power and the presence of social challenges such as domestic violence. When women have access to their own financial resources, they often gain more influence over household decisions and their own lives. However, systemic issues like violence continue to threaten their well-being and limit their overall autonomy. Understanding these connections is essential for developing effective policies that promote women's empowerment and improve their overall demographic and health outcomes.

57. (C) The age, sex, and rural-urban structure of the SC/ST population.
In population studies, composition refers to the internal makeup of a specific group based on various demographic characteristics. For Scheduled Castes and Scheduled Tribes, this involves analyzing the distribution of individuals by age and sex, as well as where they reside, such as in rural or urban areas. This detailed information is necessary for understanding the specific needs of these communities and for planning effective social and developmental programs that are tailored to their unique demographic profiles.

58. (A) Development plans and programmes for STs.
Targeted regional policies are often used to address the specific needs of indigenous and tribal populations by focusing resources on their unique geographical areas. These programs aim to provide better health, education, and economic opportunities within tribal blocks to foster development while respecting local cultures. By directing funds and attention to these specific groups, governments can more effectively reduce disparities and monitor how these interventions impact the overall well-being and demographic trends of the tribal population.

59. (C) Statement I is true, but Statement II is false.
Effective policy-making for individuals with disabilities requires a clear understanding of the diverse types of impairments that exist. Classification systems are necessary to distinguish between various physical, sensory, or mental challenges, as each requires different types of support and rehabilitation. By using detailed categories, governments can design more targeted and effective programs that address the specific needs of each group, rather than treating all disabilities as a single, uniform category with a one-size-fits-all approach.

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including risks of abuse and the consequences of early pregnancy. These issues have long-term implications for their future health and productivity. Understanding these factors is crucial for creating supportive systems that help young people navigate this transition safely and effectively.

46. (D) Health and nutrition issues of adolescents.
The initiation of sexual activity is a significant event during the adolescent years that carries various health and social implications. Within the study of young populations, this topic is analyzed to understand its connection to issues like reproductive health, the prevention of infections, and the risks associated with early pregnancy. By focusing on these aspects, researchers and policymakers can develop better educational programs and health services that address the specific needs of adolescents during this critical stage.

47. (A) Systematically identifying, categorizing, and valuing the diverse types of work women do, including unpaid labor.
Profiling women's work is an essential demographic and economic exercise aimed at making their total contribution to society visible. It involves looking beyond formal employment to include activities like subsistence farming, caregiving, and household management. Because these forms of labor are often unpaid and excluded from traditional statistics, profiling helps in understanding the true extent of women's economic participation and provides a more accurate basis for developing fair labor and social policies.

48. (A) 3, 1, 2, 4
In many traditional societies, a woman's life often follows a established sequence of social and biological milestones. This progression typically begins with puberty, followed by marriage and the subsequent years of childbearing. Later in life, widowhood may occur, presenting unique social and economic challenges. Understanding this life-course sequence is vital for analyzing the changing needs and status of women at different ages and for designing age-appropriate interventions in health and social welfare programs.

49. (C) Statement I is true, but Statement II is false.
The informal sector is a major source of employment for many people, particularly women in developing nations who may lack access to formal jobs. However, this type of work is often characterized by a lack of legal protection, low wages, and the absence of social benefits like health insurance or job security. While it provides necessary income, the precarious nature of informal labor often leaves workers vulnerable to exploitation and economic instability throughout their lives.

50. (A) 1, 2, and 3
Globalization has reshaped the global workforce by creating new jobs, particularly in export-oriented industries that often employ women. While this can provide new opportunities for income and independence, it can also lead to increased vulnerability in low-skilled and unregulated positions. At the same time, these shifts can create new social spaces where women can negotiate their roles and exercise agency. The impact is therefore complex, offering potential for both advancement and increased risk.

51. (B) P-3, Q-4, R-1, S-2
The impact of global economic changes is often understood through concepts that describe the status and actions of individuals within the system. This includes the process of being marginalized or excluded, the state of being vulnerable to economic shocks, and the capacity of people to act as independent agents. Identifying the social and economic spaces where power is exercised is also crucial for understanding how different groups can influence their own outcomes in a globalized world.

52. (D) The differential health outcomes for men and women due to indoor air pollution from cooking fuels.
The environment within the home can have different health consequences for residents based on their traditional roles and the amount of time they spend indoors. In many cultures, women and children are more exposed to harmful smoke from traditional cooking fuels, leading to specific respiratory and health problems. This differential impact highlights how gendered divisions of domestic labor interact with the physical

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67. (C) A decline in the total fertility rate (TFR).
When women are empowered with education and greater control over their lives, they often make different choices regarding family size and reproductive health. This shift in decision-making power is a key driver of demographic transitions, typically leading to a decrease in the overall number of children born per woman. A declining fertility rate is one of the most significant demographic consequences of improving the status and autonomy of women within a society, reflecting broader social and economic changes.

68. (A) The concentration of the SC population in certain states, districts, and rural/urban areas.
Analyzing the distribution of a population involves looking at where specific groups are located across different geographic levels. For Scheduled Castes, this means investigating their presence in various regions, states, and within both rural and urban settings. This spatial analysis is crucial for understanding regional disparities and for ensuring that social and developmental programs are effectively targeted to the areas where these communities are most concentrated and where the need for support may be highest.

69. (B) 1, 2, 3 and 4
Comprehensive studies on individuals with disabilities focus on several key demographic and policy-related aspects. This includes examining the total number and growth of this group, their geographic distribution, and how different types of impairments are officially categorized. Furthermore, evaluating the development plans and programs designed to support this population is a central area of research. These efforts are essential for understanding the status of the physically challenged and for ensuring their inclusion in national development goals.

70. (B) The challenges women face in balancing work with pregnancy and childcare.
Maternity benefits are essential policies designed to support women during a critical period of their lives, ensuring they do not face economic hardship or job loss due to pregnancy. These benefits help women manage the dual roles of professional participation and domestic responsibilities, fostering a more inclusive and supportive work environment. By providing paid leave and job security, such measures contribute to maternal well-being and encourage the continued participation of women in the formal labor force.

71. (B) Gender roles and relations shape who migrates, why they migrate, and their experiences during migration.
The decision to move to another location is rarely a gender-neutral process; it is deeply influenced by the social expectations and power dynamics within families and communities. Gender roles often determine whether it is more acceptable for men or women to migrate for work and can affect the types of jobs they seek and the risks they face. Understanding these gendered patterns is essential for analyzing the causes and consequences of migration and for developing supportive policies for all migrants.

72. (A) 1, 2, 4, 3
Analyzing gender issues requires looking at multiple levels of society, from the broad global environment down to individual households. This progression involves understanding how international economic trends and national legal frameworks set the stage for community-level social norms. Finally, these factors influence the most personal level of decision-making within the family and household. A comprehensive analysis must consider how these different layers interact to shape the lives and opportunities of men and women in various contexts.

73. (D) Statement I is false, but Statement II is true.
A complete understanding of economic participation requires a broad view of what constitutes work, particularly when analyzing the contributions of women. While formal employment is important, many women spend a large portion of their time on unpaid domestic duties, caregiving, and subsistence activities that are essential for survival but often ignored in traditional statistics. Including these forms of labor in economic profiles is necessary to accurately reflect women's roles and to design policies that support their full contribution to society.

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60. (B) Assistance, rehabilitation, and opportunities for integration into society.
Modern development plans for individuals with disabilities are focused on fostering independence and ensuring full participation in community life. These initiatives provide essential rehabilitation services, assistive devices, and educational or vocational training. The goal is to remove barriers that prevent the physically challenged from contributing to and benefiting from social and economic progress. By promoting integration rather than isolation, these programs aim to improve the quality of life and social status of all individuals with impairments.

61. (C) Genetic predispositions to certain diseases.
Differences in mortality rates between men and women are often more heavily influenced by social and behavioral factors than by purely biological ones. Socially encouraged risk-taking, unequal access to resources like food and medicine, and the prevalence of gender-based violence all play significant roles in shaping these outcomes. While genetics can affect susceptibility to some conditions, the widespread disparities in life expectancy and cause of death are largely rooted in the social environment and gendered roles in society.

62. (A) The range of available methods, devices, and procedures used to prevent pregnancy.
Contraceptive technology encompasses the various medical and physical means developed to help individuals and couples manage their fertility. This includes a broad spectrum of options, from hormonal methods and barrier devices to surgical procedures and long-acting implants. Understanding the availability and effectiveness of these technologies is a key part of reproductive health studies, as it directly relates to family planning, maternal health, and the ability of individuals to make autonomous choices about their reproductive lives.

63. (A) P-2, Q-3, R-4, S-1
Different social and demographic issues are often associated with specific groups within a population, requiring specialized areas of study and policy focus. This includes analyzing economic disparities in the workforce, monitoring the impact of development programs on marginalized communities, and addressing the unique health and safety concerns of adolescents. Additionally, classifying impairments is essential for supporting the physically challenged, ensuring that each group receives the appropriate attention and resources needed to improve their well-being and social status.

64. (A) The shift from agricultural to industrial and service-based economies.
Globalization drives significant structural changes in the way economies operate, often leading to a transition away from traditional farming toward more diverse manufacturing and service sectors. This shift alters the types of jobs available and the skills required by the workforce, which can have different impacts on men and women. Understanding these changing patterns is essential for analyzing how global economic forces influence employment trends, migration, and the overall socio-economic development of various populations around the world.

65. (B) 2 and 3
Individual agency refers to the capacity of people to act independently, make their own choices, and challenge the social or economic structures that constrain them. In a globalized world, new economic opportunities and social connections can sometimes provide women with new ways to exercise this agency and negotiate for better conditions in their lives. Recognizing the importance of agency is essential for understanding how people are not just passive recipients of change but active participants in shaping their own futures.

66. (A) Both A and R are true and R is the correct explanation of A.
Inheritance systems that prioritize male lineage can significantly undermine the economic security and autonomy of women by restricting their access to major assets. When property and land are traditionally passed from fathers to sons, daughters are often left without a secure economic base, which can limit their ability to invest in businesses or provide for themselves. These legal and social rules are a fundamental source of gender inequality, affecting wealth distribution and economic participation across generations.

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23. (D) Ensuring that a gender perspective is central to all activities, including policy-making, research, and resource allocation.
Gender mainstreaming is a strategic approach designed to ensure that the concerns and experiences of both men and women are an integral dimension of the design and implementation of policies and programs. This involves moving beyond separate "women's projects" to incorporate gender analysis into every sector of development. By making gender equality a routine part of all organizational processes, societies can more effectively address systemic disparities and promote inclusive growth.

24. (D) Statement I is false, but Statement II is true.
The strategy of gender mainstreaming aims to integrate gender equality concerns into the core of all developmental activities rather than isolating them in a single department. The objective is to ensure that all policy areas, from infrastructure to health, consider the different needs and impacts on men and women. This approach makes gender equality a routine concern for the entire government and mainstream agenda, leading to more sustainable and equitable development.

25. (A) P-4, Q-2, R-3, S-1
Integrating a gender perspective across various sectors requires specific actions tailored to the unique challenges of each field. In agriculture, this means ensuring women have equal rights to land and resources, while in health, it involves designing programs for the specific needs of both sexes. Educational reforms focus on removing stereotypes from curricula, and workplace policies aim to ensure pay equity and safety, collectively working towards a more balanced and fair society.

26. (A) The study of plate tectonics.
Gender mainstreaming is a social and developmental strategy applicable to fields where human roles, policies, and resource distribution are central. Sectors such as health, agriculture, and urban planning directly involve human interactions and can therefore be analyzed for gender-specific impacts. However, purely physical sciences like plate tectonics, which study the movement of the earth's crustal plates, are governed by geological laws and do not have a social or gendered dimension.

27. (D) Women's autonomy and empowerment.
Addressing gender inequality requires a focus on increasing the capability of women to make independent choices and participate fully in all aspects of life. Empowerment involves providing the tools, resources, and social environment necessary for women to exercise agency over their own bodies and futures. This autonomy is a fundamental indicator of the status of women and a key driver of positive demographic changes, such as improved maternal health and education.

28. (D) 1, 2, 3, and 4
Gender inequality is a multifaceted issue that spans social, economic, health, and domestic spheres. It manifests through restricted physical mobility, disparities in pay, unequal access to nutritional resources, and the prevalence of violence within the home. Understanding these various dimensions is essential for identifying the systemic barriers that prevent women from achieving equality and for developing comprehensive strategies to address the root causes of discrimination across all areas of society.

29. (C) The extent to which women are able to actively participate in economic and political life.
The Gender Empowerment Measure is a specialized indicator used to evaluate the level of participation and decision-making power held by women in a country. It focuses on women's representation in parliament, their presence in professional and managerial positions, and their share of earned income. By tracking these specific metrics, the measure provides insight into how much agency women have in the public sphere compared to their male counterparts in the society.

30. (A) Both A and R are true and R is the correct explanation of A.
Increasing the status and autonomy of women leads to significant changes in population trends and household well-being. Empowered women, particularly those with higher education and financial independence, typically make different reproductive choices, resulting in smaller family sizes and better health outcomes for their

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74. (B) The general principles are illustrated using specific data and examples from India.
Using a specific country as a focus in population studies allows researchers to apply broader demographic theories to a real-world context with detailed data. By examining the patterns of illness and death within India, students can better understand how general factors like gender roles, economic status, and healthcare access manifest in a specific population. This approach provides a concrete way to analyze complex demographic issues and illustrates the practical challenges and successes of different health and social policies.

75. (B) P-2, Q-3, R-4, S-1
Various concepts in gender studies are best understood through practical examples that illustrate their impact on daily life. This includes examining how poverty disproportionately affects women and how legal rights to resources like education serve as vital entitlements. Additionally, the division of labor within a household and the degree of independent decision-making power regarding one's own health are key indicators of a woman's status and autonomy, highlighting the multifaceted nature of gender inequality in different spheres of life.

76. (B) Physical, mental, and reproductive health.
Experiences of abuse and maltreatment during the critical years of adolescence can have profound and lasting effects on a young person's well-being. These negative impacts extend beyond physical injuries to include serious mental health challenges and potential risks to their reproductive health and future development. Recognizing these issues as major health concerns is essential for creating comprehensive support systems and protective environments that help ensure adolescents can grow into healthy and productive adults within their communities.

77. (D) Genetic disorders
While genetic factors can influence individual health, the major risk factors identified for men's health are largely rooted in social behaviors and expectations. Norms of masculinity that encourage risk-taking, combined with higher rates of substance use like alcohol and tobacco, contribute significantly to the patterns of illness and injury observed in the male population. These factors, along with a higher incidence of accidental deaths, highlight how gendered lifestyles and social pressures shape health outcomes more profoundly than purely biological traits.

78. (B) 1, 2 and 3 only
Addressing gender issues in the workplace involves a broad analysis of policies and conditions that affect all employees. Key areas of concern include ensuring equal pay for similar work, improving general working conditions, and implementing gender mainstreaming strategies in both public and private sectors. These efforts are not just for female workers but are aimed at creating a fair and equitable environment for everyone, recognizing that workplace dynamics and social roles influence the experiences of both men and women throughout their careers.

79. (C) The phenomenon of a growing proportion of the poor being women or from female-headed households.
The concept of the feminization of poverty highlights the disproportionate impact of economic hardship on women around the world. This trend is often driven by systemic inequalities such as lower wages, limited access to resources, and the burden of unpaid care work. When women have fewer economic opportunities and legal protections, they and their families are more likely to fall into and remain in poverty, making it a critical focus for social and economic development policies aiming to reduce inequality.

80. (A) Both A and R are true and R is the correct explanation of A.
Environmental changes like the depletion of groundwater significantly increase the daily labor required from those responsible for household resource collection. In many societies, women and girls bear the primary burden of fetching water, and as sources dry up, they must travel much farther and spend more time on this task. This added pressure can have negative consequences for their health and limit their ability to pursue education or other economic activities, illustrating a clear gendered impact of environmental degradation.

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81. (B) Women's access to land ownership and entitlements.
Ensuring that women have equal legal rights to inherit and own land is a fundamental step toward improving their economic status and security. Land is a key asset that provides a base for livelihood and serves as collateral for credit, yet traditional laws often favor male heirs. By formalizing women's entitlements to property, policies can help reduce gender-based wealth disparities and empower women to participate more fully and independently in the economic life of their communities and the broader national development.

82. (A) Fertility rates, mortality rates, and migration patterns.
Developmental initiatives aimed at improving the social and economic conditions of marginalized communities can lead to significant changes in their demographic characteristics over time. As access to education and healthcare improves, patterns of birth and death often shift, reflecting the better well-being of the population. Additionally, new economic opportunities can alter why and where people move, impacting overall migration trends. Monitoring these demographic indicators is essential for evaluating the success and long-term impact of targeted social and developmental programs.

83. (B) 1, 2, 3, 5
Adolescence is a pivotal stage of life marked by several key biological and social issues that significantly influence future outcomes. This includes the physical changes of puberty, the circumstances of one's initial sexual experience, and the risks associated with abuse and early pregnancy or its consequences. Addressing these specific concerns is vital for the health and development of young people. By focusing on these core issues, societies can better support adolescents through this transition and promote their long-term well-being and productivity.

84. (B) The ability of women to make independent decisions about their own lives and bodies.
Autonomy refers to the degree of control an individual has over their own choices and actions, particularly regarding personal and reproductive health. For women, this includes the power to decide on healthcare, freedom of movement, and participation in major household decisions. High levels of autonomy are closely linked to better health outcomes and the ability to exercise agency within the family and society. It is a key dimension of empowerment that drives positive social and demographic changes across all populations.

85. (C) Gender is synonymous with biological sex.
It is essential to distinguish between biological sex, which refers to physical and physiological traits, and gender, which describes the socially constructed roles and expectations assigned to individuals. Gender norms are not fixed by nature but are learned and can vary significantly across different cultures and throughout history. Recognizing that gender is a social concept allows for a deeper analysis of how societies create and maintain inequalities and provides a framework for promoting social change and greater equality for all people.

86. (B) A woman who decides to migrate for a better job, sends remittances home, and negotiates her role within her family.
Agency in the context of migration involves the ability of individuals to make independent choices and actively shape their own lives despite the challenges of moving to a new place. When migrant women take control of their employment decisions, manage their earnings, and use their new economic status to improve their position within their families, they are demonstrating high levels of agency. This empowerment shows that migrants are not just passive subjects of global forces but active participants in their own development.

87. (D) Statement I is false, but Statement II is true.
Men and women face different health burdens that are shaped by both biological factors and social expectations. While certain conditions affect everyone, women face specific risks related to pregnancy and reproductive health that can lead to high rates of illness and death in developing regions. On the other hand, men's mortality patterns are often influenced by higher rates of accidents and lifestyle choices associated with gendered behaviors. Understanding these distinct profiles is essential for creating effective and targeted public health strategies.

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88. (A) Gender and environment studies.
Environmental issues such as deforestation, water scarcity, and climate change do not impact all people in the same way, as social roles often determine how individuals interact with their surroundings. Research into the gendered impact of environmental degradation explores how these changes affect the lives and workloads of men and women differently. Because women in many cultures are primarily responsible for resource collection, they are often more directly affected by environmental changes, making this a crucial area of study for sustainable development.

89. (B) P-3, Q-2, R-1, S-4
Different segments of the population require specialized demographic analysis and policy interventions based on their unique characteristics and needs. This involves examining the size and growth of specific communities, evaluating the impact of developmental plans on marginalized groups, and categorizing impairments to better support individuals with disabilities. Additionally, focusing on the specific health and reproductive issues of adolescent girls is essential for ensuring their well-being and future potential, highlighting the diverse focus of modern population and social studies.

90. (B) Establishing a clear policy against sexual harassment and a mechanism for redressal.
Gender mainstreaming in the workplace involves creating an environment that is safe and fair for all employees by addressing systemic issues that can hinder participation and equality. Implementing formal policies against harassment and providing clear ways to report and resolve issues is a vital step toward this goal. Such measures help ensure that both men and women can work with dignity and security, fostering a more professional and inclusive organizational culture that supports the talents and contributions of all workers.

91. (B) Socially constructed ideals of masculinity may promote risk-taking, violence, and avoidance of healthcare.
The way society defines what it means to be a man can have significant consequences for male health outcomes. Norms of masculinity often emphasize toughness and self-reliance, which can lead men to engage in dangerous activities, ignore early symptoms of illness, or view seeking medical help as a sign of weakness. These socially learned behaviors increase the risk of injury, chronic disease, and premature death, demonstrating that gender roles are a major factor in shaping the health patterns of the male population.

92. (B) The gender dimension of economic development.
Economic development is not just about national growth but also about how different social groups access and control the resources needed for well-being. This involves analyzing disparities in land ownership, the fairness of inheritance laws, access to financial services like credit, and the existence of wage gaps between men and women. Collectively, these factors shape the economic status of women and determine their ability to participate fully and benefit from the developmental process within their societies and nations.

93. (B) Gender relations are dynamic and have been shaped by social, economic, and political forces.
Looking at the history of gender roles helps to demonstrate that the expectations placed on men and women are not natural or unchanging. Instead, these roles have been constantly redefined as societies experience economic shifts, political movements, and cultural changes. Recognizing this fluidity is important for understanding that current gender norms are the product of specific historical contexts and can be challenged and transformed to promote greater equality and more fair social arrangements in the future.

94. (A) Both A and R are true and R is the correct explanation of A.
Family planning is most effective when it is approached as a shared responsibility involving both men and women. Men's attitudes toward contraception and their cooperation in using different methods significantly influence a couple's reproductive choices and the overall success of health programs. Furthermore, men have their own reproductive health needs that should be addressed. By actively involving men in these initiatives, societies can foster better health outcomes, improve communication within families, and promote more equitable and informed reproductive decisions.

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trends of a nation. When a large number of young people have children, it naturally lowers the average age at which people in that population start their families. This can lead to faster population growth and often has long-term impacts on the health and education of both the young parents and their offspring. Understanding these trends is essential for developing effective reproductive health and social support programs for adolescents and their communities.

123. (C) Any defined population or sub-population group.
Fundamental demographic measures such as size, growth, and distribution are used by researchers to describe and analyze any group of people that has been clearly defined. This applies to the entire population of a country as well as smaller sub-groups based on age, ethnicity, disability, or other characteristics. These metrics provide a baseline for understanding how different groups are changing over time and where they are located, which is essential for effective social planning and for ensuring that the needs of all individuals are being met appropriately.

124. (D) Statement I is false, but Statement II is true.
The field of birth control has seen significant progress over the years, with many new methods developed for both men and women to manage their fertility. While there is now a wider variety of effective options available, access to these technologies remains unequal in many parts of the world. Social and economic barriers often prevent individuals from using the methods that are best suited to their needs. Improving access and information is therefore a key part of international efforts to support reproductive health and autonomous choices for all people.

125. (C) A combination of biological factors (e.g., childbirth) and social factors (e.g., discrimination).
The health challenges faced by women in many regions are the result of an interaction between their biological roles and the social environment in which they live. While the physical process of pregnancy and childbirth carries inherent risks, these are often worsened by social inequalities such as poor nutrition, limited education, and unequal access to quality healthcare. Addressing the high rates of illness and death among women requires a comprehensive approach that targets both medical needs and the underlying social disparities that affect their overall well-being.

126. (A) 1 and 4
Economic development is deeply connected to how fairly different groups can access and control the resources needed for a good life. This involves looking at women's ability to manage assets like land and credit, as well as recognizing that many of their contributions occur in informal or domestic roles that are often ignored in traditional economic reports. Understanding these factors is essential for creating more inclusive and fair developmental policies that ensure that the benefits of national growth reach all members of society, regardless of their gender or role.

127. (B) Arenas, from the household to the global level, where gender relations are contested and where women can exercise agency.
Social power is exercised in many different settings, from personal interactions within a family to the large-scale decisions made by international organizations. These spaces are where social roles and expectations are constantly being challenged and redefined. Understanding where these contests for influence take place is crucial for recognizing how individuals can act as independent agents to shape their own lives and communities. By identifying and engaging in these arenas, people can work to transform the social structures that influence their status and opportunities in a globalized world.

128. (B) The horizontal and vertical segregation of jobs, with women often concentrated in lower-paying sectors and positions.
Labor markets in urban areas are often characterized by a division where men and women are concentrated in different types of work and at different levels of authority. This segregation often results in women being overrepresented in lower-paid, less secure positions and facing a "glass ceiling" that prevents them from moving into higher leadership roles. Recognizing these patterns is essential for identifying the systemic barriers to equality in employment and for developing policies that promote fair pay and equal opportunities for advancement for all workers in the city.

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102. (B) Certain economic changes can place women in precarious situations with little social or legal protection.
The process of globalization can create significant economic instability for those working in unregulated or low-skilled sectors. For many women, this results in a high degree of vulnerability, where they may face job insecurity, low pay, and a lack of access to social security or legal recourse. This concept highlights that economic shifts do not automatically lead to empowerment and can sometimes leave individuals more exposed to exploitation and harm, necessitating stronger protective measures and social safety nets in a globalized economy.

103. (B) P-3, Q-2, R-1, S-4
Developmental changes and resource scarcity often have specific consequences that are mediated by existing gender roles in society. This includes how environmental problems increase the time spent on domestic chores and how technological shifts in agriculture can displace certain types of labor. Similarly, new industrial opportunities may provide jobs but with poor conditions, while the loss of health services can disproportionately affect those with specific reproductive needs. Analyzing these connections is essential for understanding the full social impact of development and economic change.

104. (B) It can impact women's physical and mental health, reproductive choices, and mortality.
Violence within the home is a serious social and health issue with direct demographic consequences. It negatively affects the physical and mental well-being of individuals and can severely limit their ability to make independent choices about their own health and reproductive lives. High levels of domestic violence are linked to increased maternal mortality and poor child health outcomes. Addressing this issue is therefore not only a matter of legal justice but also a vital part of improving the overall demographic health and status of women in society.

105. (B) Measure the inequality in key areas of economic and political participation and decision-making.
The Gender Empowerment Measure is a specialized tool used to evaluate the degree to which women are able to influence the public and economic life of their country. By looking at their representation in government and high-level professional roles, along with their share of income, the measure provides a clear picture of gender-based power disparities. This focus on active participation and decision-making helps to identify where more progress is needed to achieve true equality in terms of influence and opportunity.

106. (B) 2 and 3
Gender is a critical variable in population studies because it profoundly influences key demographic events such as birth, movement, and survival. The relationship between social roles and fertility levels, as well as how gender norms shape the decision to migrate, are central areas of research. Unlike biological sex, gender is not a constant and varies across cultures. Understanding these dynamics is essential for accurately analyzing population trends and for designing effective social and health policies that address the specific needs of different groups.

107. (B) Understand whether these interventions are achieving their goals of upliftment and affecting demographic outcomes.
Evaluating the impact of developmental initiatives for marginalized groups is essential for determining if these policies are effectively reducing inequality and improving lives. By studying changes in health, education, and economic status, researchers can see how these interventions influence demographic patterns like birth and death rates. This analysis provides vital feedback for policymakers, allowing them to adjust programs to better meet the needs of the community and ensure that the goals of social and economic advancement are being met effectively over time.

108. (A) Both A and R are true and R is the correct explanation of A.
Creating detailed profiles of the various types of work done by women is necessary for developing fair and effective social policies. By accounting for all labor, including unpaid household chores and caregiving, the full extent of women's economic contribution is made visible. This comprehensive view allows governments to design programs that better support women's economic stability and empowerment, ensuring that policies are based

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on a realistic understanding of how different people contribute to the overall economy and the well-being of their communities.

109. (C) Women's hair and clothing styles.
The economic development of a society is closely linked to how fairly resources and opportunities are distributed among its members. This involves looking at women's access to land and credit, the existence of pay disparities, and the provision of essential benefits like maternity leave. While personal appearance and fashion are part of individual expression, they are not typically used as primary indicators of economic status or systemic inequality within the broader study of gender and national developmental trends in population and economic research.

110. (B) These environmental changes have differential impacts on men and women, constituting a population issue.
Environmental shifts such as climate change and changes in resource availability are important in population studies because they affect people's lives in ways that are often mediated by their social roles. Because men and women often have different responsibilities for resource management and food production, they are impacted differently by these changes. Recognizing these varied effects is essential for understanding the full social consequences of environmental degradation and for developing inclusive strategies that help all members of a community adapt to changing environmental conditions.

111. (C) 1, 2, 3, 4 and 5
Men's health is influenced by a range of factors that are often rooted in social expectations and behavioral patterns. This includes the pressure to conform to certain ideals of masculinity, which can lead to higher rates of substance use and a greater likelihood of being involved in accidents. Together, these factors contribute to higher mortality and illness rates among men in many populations. Addressing these risks requires a comprehensive approach that considers how social roles and individual choices interact to shape the overall health of the male population.

112. (A) Women's ability to bargain within their families and communities for better conditions or more autonomy.
Negotiation in a social context refers to the process through which individuals attempt to improve their status and influence within their own homes and local groups. In a changing global environment, this may involve women using new economic opportunities or social connections to bargain for a greater voice in household decisions or for more freedom to pursue their own goals. Understanding this process is key to recognizing how people exercise agency to navigate the social constraints and opportunities they face in their daily lives.

113. (D) Statement I is false, but Statement II is true.
Modern demographic analysis recognizes that individuals with disabilities are an important part of the population whose needs and numbers must be understood. Research focusing on the size, growth, and geographic distribution of this group is essential for effective national planning and policy-making. This information helps governments to ensure that resources for health, education, and rehabilitation are distributed fairly and effectively, supporting the inclusion of the physically challenged in all aspects of social and economic development within the country and its various regions.

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114. (B) Employment that is often unregulated, with low pay, poor conditions, and no social security.
Involvement in the informal sector often means working in jobs that are not monitored by the government and lack the protections found in formal employment. For many women, this type of labor provides a vital source of income but also carries high risks due to low wages and the absence of benefits like health insurance or job security. This precariousness makes it difficult for workers to achieve long-term economic stability and highlights the need for policies that provide better support and legal recourse for those in informal roles.

115. (C) To facilitate their rehabilitation and equal participation in social and economic life.
The primary goal of developmental programs for people with disabilities is to remove the barriers that prevent them from fully engaging with their communities. These initiatives provide the

necessary medical support, assistive technology, and vocational training needed for independence and social inclusion. By focusing on rehabilitation and equality of opportunity, these programs aim to ensure that the physically challenged can contribute their talents and participate in all aspects of society on an equal basis with others, fostering a more inclusive and diverse nation.

116. (A) P-3, Q-4, R-1, S-2
Gender inequality manifests in several interconnected ways across different areas of life, from health and education to political and economic spheres. This includes disparities in resource distribution within families, differences in pay for similar work, and unequal representation in government leadership. Together, these patterns limit the opportunities and influence of women relative to men. Understanding how these various forms of inequality interact is essential for developing comprehensive social policies that address the root causes of discrimination and promote greater fairness throughout all levels of society.

117. (D) The health of the reproductive organs for aesthetic purposes only.
Reproductive health is a holistic concept that focuses on the physical, mental, and social well-being of individuals in all matters related to the reproductive system. It involves the ability to have a safe and fulfilling life, the freedom to make informed choices about having children, and access to necessary health information and services. This broad perspective ensures that both men and women receive the support and care needed for their reproductive lives, going beyond mere biology to include the social and psychological dimensions of human health.

118. (B) Gender inequality can be both a cause and a consequence of poverty.
The relationship between gender and economic status is complex, as social disparities can drive poverty and be worsened by it. When women have limited access to education, lower wages, and fewer legal rights, they are more likely to live in poverty. At the same time, living in economic hardship can further restrict their opportunities and autonomy, creating a cycle of disadvantage. Addressing gender inequality is therefore a vital part of any effective strategy to reduce poverty and promote sustainable economic growth for all members of society.

119. (C) Distribution
Analyzing the geographic spread of a specific population group involves looking at where its members are concentrated across different parts of a country. For Scheduled Tribes, this means investigating their presence in various states and regions to understand their unique settlement patterns. This information is crucial for ensuring that developmental resources and social programs are effectively targeted to the areas where these communities are located, helping to address regional disparities and meet the specific needs of these groups within their own traditional and modern environments.

120. (A) Both A and R are true and R is the correct explanation of A.
Gender mainstreaming is a strategic approach designed to ensure that the needs and experiences of both men and women are considered in all areas of policy and planning. Rather than creating isolated programs for women, it aims to transform the mainstream agenda so that equality is a core goal in every sector, from transport to health. This integration helps to ensure that all members of society benefit from development and that policies do not unintentionally perpetuate existing gender inequalities or create new forms of discrimination.

121. (C) Environmental degradation
Changes in the natural environment can have profound and varied impacts on different members of a community based on their social roles and responsibilities. Issues like deforestation and resource depletion often increase the daily workload for those responsible for gathering fuel and water, which in many cultures is primarily the role of women. These added burdens can limit their participation in other activities and have negative consequences for their health and social connections, illustrating how environmental problems can worsen existing social and gender-based inequalities within a population.

122. (A) It contributes to the lowering of the average age of childbearing in a population.
Pregnancy during the adolescent years has significant implications for the demographic

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increasingly focus on preventing such violence and providing support for those affected by it.

136. (A) 'Sex' is biological, while 'gender' is a social construct.
Understanding the difference between the physical traits that define sex and the social roles that define gender is fundamental to social analysis. While sex refers to the biological and physiological characteristics of individuals, gender describes the expectations and norms that societies build around these differences. Because gender roles are learned and vary across cultures, they can be changed to promote greater equality. This distinction allows researchers and policymakers to analyze how social structures influence the opportunities and experiences of different people throughout their lives and communities.

137. (C) The detailed chemical composition of contraceptive pills.
The study of population and gender focuses on how social roles and biological characteristics interact to shape broad demographic trends like birth and death rates. This includes evaluating developmental programs and strategies like gender mainstreaming across different sectors. While understanding the availability and use of medical technologies is important, the highly specialized scientific details of their chemical makeup are typically handled in medical or pharmacological research rather than in the social and demographic analysis of how these tools are used by different populations and their social impacts.

138. (B) Migration can reinforce, but also sometimes challenge, traditional gender divisions of labor.
The movement of people to new locations for work or other reasons can have a significant impact on social roles and family structures. While migration sometimes strengthens existing gender divisions, it can also provide opportunities for individuals to take on new responsibilities and gain greater independence. These changes are complex and can vary depending on the social environment of both the home and the new location. Analyzing these patterns is essential for understanding how migration influences social status and the overall well-being of all migrants and their families.

139. (D) Statement I is false, but Statement II is true.
The health landscape in developing nations is marked by a complex mix of different types of health issues that affect people in various ways. This includes infectious diseases as well as long-term conditions and health problems related to reproductive life and social violence. These patterns are not uniform and differ significantly between men and women based on their physical characteristics and social roles. Understanding this diverse burden of illness is essential for creating effective healthcare systems that can address the specific needs of all segments of the population.

140. (A) Programme for the physically challenged population.
Policies that improve the accessibility of public buildings are key examples of efforts to support the inclusion of people with disabilities in all aspects of community life. By removing physical barriers, these initiatives help individuals with impairments to move freely and participate more fully in social and economic activities. Such programs are a central part of developmental plans for the physically challenged, aiming to ensure that everyone has equal access to public services and opportunities, thereby fostering a more inclusive and diverse environment for all members of society.

141. (D) 1, 2, 3 and 4
The process of global economic integration has led to significant changes in how work is organized, creating new opportunities while also introducing new risks. For many women, these shifts can mean gaining employment but also facing increased vulnerability in unregulated or low-skilled jobs. At the same time, these changes can provide a space for individuals to negotiate their roles and exercise more agency. Understanding these dynamics is essential for analyzing how globalization influences labor markets, social roles, and the overall economic status of different groups within a population.

142. (C) The national origin of the company's CEO.
When analyzing the environment in which people work, researchers focus on factors that directly affect their safety, well-being, and ability to do their jobs fairly. This includes workplace safety measures, protection from

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129. (B) P-4, Q-1, R-2, S-3
Different segments of society face unique challenges that require specific attention in both research and policy-making. This includes addressing economic disparities and resource rights for women, as well as understanding how social norms of masculinity affect men's health behaviors. Similarly, focusing on the developmental milestones of adolescents and the impact of social programs on marginalized communities is essential for promoting overall well-being. By recognizing these distinct issues, societies can develop more effective and targeted strategies to support the diverse needs of all their members throughout their lives.

130. (B) Different types of impairments require different kinds of support and policies.
Effective support for individuals with disabilities requires a clear understanding of the diverse nature of their impairments. Using a classification system allows governments and social organizations to distinguish between different needs and to provide the most appropriate medical care, assistive devices, and vocational training for each individual. Rather than a uniform approach, this targeted strategy ensures that the unique challenges faced by each person are addressed, fostering a more inclusive environment that helps everyone participate fully in the social and economic life of their communities.

131. (D) It means women must not consult their families in any decision-making.
Autonomy refers to the capacity of an individual to make independent choices about their own life and body, such as deciding on healthcare or participating in household financial management. While it involves having a voice and the power to act on one's own behalf, it does not mean a total rejection of family or community discussion. Instead, it focuses on the ability of individuals to exercise agency and control over their own lives. High levels of autonomy are strongly linked to better health outcomes and greater social equality for all people.

132. (B) The change in the total number of individuals in the group over a period of time.
In demographic studies, the term growth describes how the size of a specific population group changes between two points in time. This change can be an increase or a decrease and is determined by the balance of births, deaths, and the movement of people in and out of the group. Understanding the rate and nature of this growth is essential for planning necessary services like schools and hospitals and for ensuring that the future needs of all members of society can be met effectively and sustainably.

133. (A) Both A and R are true and R is the correct explanation of A.
Men and women have different health profiles that are shaped by both biological characteristics and the social environments in which they live. While many health issues affect everyone, some conditions are specific to one sex due to physical differences. Additionally, gendered expectations and behaviors can lead to different risks and patterns of illness and death between the sexes. Recognizing these distinct patterns is essential for developing healthcare strategies that are effective and meet the unique needs of both men and women across their lifetimes.

134. (A) The differential impact of environmental degradation.
Environmental problems like drought can affect family members in different ways based on their traditional roles and responsibilities. In many communities, children, especially girls, are often called upon to help with increased domestic chores like fetching water when resources become scarce. This can force them to miss school, negatively affecting their future opportunities. Policies that aim to keep girls in education during such crises are essential for addressing the gendered impact of environmental issues and for ensuring that development goals are maintained even during difficult times.

135. (B) Domestic violence
Violence within the home is recognized as a major challenge to the status of women and has significant implications for public health and population trends. It affects the physical and mental well-being of individuals and can limit their ability to make autonomous decisions about their lives and healthcare. Addressing this issue is crucial for promoting gender equality and for improving the overall quality of life and safety of all members of society. Modern social policies

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95. (A) The process by which certain groups (e.g., female workers in specific sectors) are pushed to the fringes of economic and social life.
In the context of global economic shifts, marginalization describes how some groups may be left behind or excluded from the benefits of new opportunities. This often happens to workers in low-skilled or informal sectors who lack the resources or legal protections needed to thrive in a globalized market. For many women, this can mean being concentrated in precarious jobs with little security or voice, highlighting how global processes can sometimes reinforce existing inequalities and create new forms of social exclusion.

96. (A) Women spend, on average, more time within the domestic sphere, making them more exposed to issues like indoor pollution or poor sanitation.
The conditions of the home environment can have different impacts on residents based on the amount of time they spend indoors and the nature of their domestic tasks. In many societies, the division of labor means that women are more exposed to health risks within the household, such as smoke from traditional cooking fuels or poor sanitation. Recognizing this differential impact is essential for designing better housing policies and health interventions that address the specific vulnerabilities associated with the home and domestic life.

97. (C) 1, 3 and 4
Studying marginalized communities in India involves monitoring their total size and how their numbers change over time through growth. It also requires an understanding of the specialized developmental programs created to address their unique needs and analyzing how these interventions affect their demographic profiles, such as health and fertility. These elements are key to assessing the progress of social inclusion policies and for ensuring that all groups within the population benefit from the nation's overall growth and developmental efforts.

98. (B) Historically, family planning programs have often targeted women as primary users of contraception.
Family planning initiatives have a long history of focusing primarily on women as the targets for contraceptive information and services. This approach often placed the main responsibility for managing fertility and family size on women, sometimes ignoring the vital role and needs of men. Recognizing this historical focus is important for understanding modern efforts to promote more balanced and inclusive programs that involve both partners, ensuring that reproductive health is seen as a shared societal concern for all individuals.

99. (C) A person with a temporary illness like the common cold.
The classification of the physically challenged population is reserved for individuals with long-term impairments that significantly affect their daily functioning and participation in society over an extended period. These include permanent conditions related to movement, vision, or hearing. Short-term illnesses or temporary health issues do not fall under this category, as they do not lead to the enduring challenges and needs for rehabilitation or specialized support that define the experience of living with a disability in a demographic and policy context.

100. (B) 4, 1, 2, 3
Adolescent health outcomes often follow a causal chain where early events and a lack of information lead to serious consequences. The initiation of sexual activity, when combined with inadequate knowledge or access to contraception, increases the risk of unplanned pregnancy. In many cases, this can lead to the use of unsafe medical procedures to terminate the pregnancy, which can have severe or fatal impacts on the young person's health. Understanding this sequence is vital for designing effective educational and healthcare interventions for youth.

101. (D) Statement I is false, but Statement II is true.
It is important to distinguish between having the right to a resource and the practical ability to use it effectively. Entitlements refer to the social and legal frameworks that grant individuals the right to things like education or property. However, even when these rights exist, social norms, lack of information, or economic barriers may prevent someone from actually accessing or benefiting from those resources. Recognizing this difference is crucial for developing policies that not only grant rights but also remove the barriers to their actual use.

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all forms of harassment, and the provision of essential support services like childcare. These conditions are central to ensuring a fair and equitable experience for all employees. While the leadership of a company is important, the specific personal details of high-level managers are not typically used as primary indicators of the overall quality of working conditions in social research.

143. (A) SC, ST, and Physically Challenged
Governments often create specialized developmental plans to address the unique needs and historical disadvantages of specific population groups. This includes initiatives for Scheduled Castes, Scheduled Tribes, and individuals with disabilities, aiming to promote their social and economic well-being and inclusion. By focusing resources and policies on these groups, societies can work to reduce systemic inequalities and ensure that everyone has equal access to the opportunities and services needed for a good life. Monitoring the impact of these plans is essential for evaluating progress and improving future policies for these communities.

144. (D) All of the above.
Integrating a gender perspective into the agricultural sector involves a wide range of actions designed to ensure that both men and women have equal opportunities and resources. This includes ensuring fair land rights, providing targeted information and training, and focusing research on the different types of crops and tasks handled by each gender. By addressing these various dimensions, societies can promote more sustainable and equitable development that benefits all members of the farming community. These comprehensive efforts are essential for improving food security and the overall well-being of rural populations everywhere.

145. (A) Both A and R are true and R is the correct explanation of A.
Participation in the informal sector provides many people with a vital source of income but also introduces significant risks due to the lack of formal protections. While this work can offer some degree of economic independence, it is often marked by low pay, poor working conditions, and an absence of benefits like job security or health insurance. For many women, this makes their economic status precarious, as they lack the legal and social safety nets needed to cope with financial or health shocks. Addressing these vulnerabilities is a key challenge for fair development.

146. (B) Women autonomy: The ability of women to make decisions concerning their own lives.
Autonomy is a central concept in the study of social empowerment, referring to the degree to which an individual can exercise control over their own choices and body. This includes the power to make independent decisions regarding health, education, and participation in the community. High levels of autonomy are strongly associated with better life outcomes and more equitable social arrangements. Understanding and promoting the capacity of all individuals to act as independent agents is vital for fostering a fair society where everyone has the power to shape their own future and well-being.

147. (B) Distribution
Analyzing where different groups of people live across various types of settlements is a key part of demographic research. For specific communities, this involves looking at their concentration in either rural areas or urban centers to understand their unique patterns of residence. This information is crucial for planning and for ensuring that social services and developmental resources are placed where they are most needed. By understanding the spatial distribution of a population, governments can better address the different challenges and opportunities faced by people in diverse living environments throughout the country.

148. (B) P-4, Q-1, R-2, S-3
Different health risks are associated with specific behaviors and environmental conditions, leading to distinct patterns of illness within a population. This includes the dangers of unsafe medical procedures, the long-term effects of substance use, and the respiratory issues caused by indoor pollution. Similarly, the circumstances of early sexual activity can have significant consequences for reproductive health. Identifying these links is essential for developing effective public health strategies that target the most critical health issues faced by different groups, aiming to improve the overall well-being and safety of the community.

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analyzing information to understand the unique challenges and needs of both men and women. By looking at data separated by sex, health planners can identify where gaps exist in access to care and where specific health problems are most severe. This targeted approach is a key part of gender mainstreaming, as it ensures that health policies and resources are directed effectively to improve outcomes for all people. This inclusive strategy is essential for building a more equitable healthcare system that addresses the diverse well-being of the entire population.

187. (B) Leads to increased rates of injury, mental illness, maternal mortality, and can affect reproductive decisions.
Violence within the household is a significant social problem with broad implications for public health and population trends. It directly affects the physical and mental health of those involved and can severely restrict their ability to make autonomous decisions about their own healthcare and lives. High levels of such violence are linked to worse demographic outcomes, including higher rates of maternal illness and death. Addressing this issue is therefore essential for promoting the safety, well-being, and overall status of all members of society, fostering a more stable and healthy population for the future of the nation.

188. (C) The breakdown of the SC population by age groups, sex, and rural-urban residence.
Understanding the internal structure of a specific community involves analyzing its demographic makeup based on several key characteristics. For Scheduled Castes, this means investigating how the population is divided by age and sex, and where people are located, such as in rural areas versus urban centers. This detailed information on composition is essential for identifying the specific needs and challenges faced by different segments of the community. This knowledge allows for more effective social planning and for the creation of targeted developmental programs that are tailored to the actual demographic profile of the population in various regions.

189. (B) Development Plans and Programmes for the physically challenged population.
Developmental initiatives for people with disabilities are focused on providing the support and resources needed for rehabilitation and full inclusion in social and economic life. This includes ensuring access to necessary medical devices and vocational training that can help individuals achieve greater independence. Such programs are essential for removing the physical and social barriers that prevent the physically challenged from participating fully in their communities. By promoting equal opportunity and participation, these plans aim to improve the quality of life and overall status of all individuals with impairments, fostering a more diverse and inclusive society for everyone.

190. (D) Statement I is false, but Statement II is true.
Men's health outcomes are influenced by several major factors that are often rooted in social expectations and behavioral choices. This includes the pressure to conform to certain ideals of masculinity, which can lead to higher rates of substance use like alcohol and tobacco, as well as a greater likelihood of being involved in accidents. Together, these risk factors contribute to higher rates of illness and death among the male population. Understanding these patterns is essential for developing public health strategies that are effective and target the specific health challenges and risks faced by men in many different societies and environments.

191. (B) Higher levels of female education and empowerment.
Broad demographic trends, such as the number of children born in a population, are strongly influenced by the social and economic status of women. Generally, when women have better access to education and the power to make independent choices about their own lives and bodies, they often choose to have smaller families. This shift in reproductive behavior is a key driver of demographic transitions toward lower fertility levels. Recognizing the link between empowerment and demographic change is essential for developing effective social and developmental policies that support both individual well-being and more sustainable population growth for the nation.

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perspective into all sectors, from infrastructure to education, societies can more effectively address systemic disparities and ensure that all members benefit from and participate in the overall progress and growth of the nation.

156. (A) Their demographic indicators like fertility, mortality, and migration.
Evaluating the success of developmental initiatives for specific communities involves monitoring how these programs affect the fundamental characteristics of the population over time. Changes in birth and death rates often reflect improvements in health, education, and economic status, while shifts in movement patterns can indicate new opportunities or changes in life stability. By analyzing these demographic indicators, researchers can see the tangible results of social and economic interventions and provide the information needed to refine and improve policies for marginalized groups, ensuring more effective and fair outcomes for everyone.

157. (B) Puberty and sexual debut.
The transition from childhood to adulthood is marked by significant biological and social events that shape an individual's future health and status. This includes the physical changes of puberty and the circumstances surrounding one's first sexual experiences, both of which are central topics in the study of adolescent well-being. Addressing these issues through education and appropriate health services is essential for helping young people navigate this period safely. By focusing on these core developmental milestones, societies can better support the health and social development of their youth during these critical years.

158. (A) Distinguish between biological sex and the socially and culturally constructed roles assigned to males and females.
Understanding the difference between the physical traits of sex and the social expectations of gender is fundamental to analyzing human behavior and population trends. Gender roles are the learned norms and behaviors that societies consider appropriate for different people, and these can vary significantly across cultures and over time. Recognizing that these roles are socially constructed rather than biologically fixed allows for a deeper investigation into how social structures create and maintain inequalities. This perspective is vital for promoting social change and for fostering a more equitable and fair environment for all.

159. (A) Both A and R are true and R is the correct explanation of A.
The decision to migrate is often influenced by social roles and expectations that differ for men and women within their communities. These gendered patterns affect who is expected to move for work, the types of jobs they find, and the specific risks and opportunities they face in a new location. Understanding these dynamics is essential for analyzing the causes and consequences of migration and for developing supportive policies that address the unique needs and vulnerabilities of all migrants, regardless of their background or the reasons for their movement to a new place.

160. (A) The specific set of diseases and health conditions that cause the most illness and death, which can vary by age, sex, and gender.
Analyzing the overall health of a nation involves identifying the most prevalent conditions that lead to poor health and mortality within different segments of the population. This "burden" is not distributed equally and is influenced by factors like age, biological sex, and social roles. Some issues may disproportionately affect certain groups based on their physical characteristics or the types of work and behaviors associated with their gender. Understanding these patterns is crucial for prioritizing health interventions and for ensuring that medical resources are directed toward the most significant challenges faced by the community.

161. (B) The tendency to devalue or ignore unpaid domestic and care work.
A major challenge in accurately assessing economic participation is that a significant amount of labor, particularly by women, occurs outside of the formal market. Activities such as household management and caregiving are essential for society but are often not counted as "work" in traditional statistics. This omission leads to an incomplete picture of women's total contribution to the economy and can result in policies that do not adequately support those in

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the specific vulnerabilities associated with domestic life and promote a safer environment for everyone.

198. (D) All of the above.
Improving the overall status and autonomy of women has significant consequences for several fundamental demographic patterns within a nation. This includes changes in average family size, better survival rates for children, and shifts in the age at which people enter marriage. These trends are closely linked to a woman's level of education and her ability to make independent decisions about her own health and life. Recognizing these demographic implications is essential for understanding the broad social impact of empowerment policies and for ensuring more sustainable and equitable development for the entire population across diverse communities and regions.

199. (B) Classification of the physically challenged population.
Providing detailed information about the different types of impairments within a population is a key part of effective social planning. By categorizing various physical, sensory, and mental challenges, governments and organizations can better understand the unique needs of the community and design appropriate support and rehabilitation services for each individual. This systematic classification is essential for ensuring that resources are distributed fairly and effectively, supporting the inclusion of all people with disabilities in the social and economic life of their country. Such data-driven approaches help to build a more inclusive environment where everyone has the opportunity to achieve their full potential.

200. (A) Both A and R are true and R is the correct explanation of A.
Understanding the difference between physical traits and the social roles assigned by different cultures is essential for any modern analysis of population and well-being. This distinction allows researchers to see how social norms and expectations shape human behavior, health outcomes, and economic opportunities across various segments of the population. By investigating how these social constructs are built and maintained, societies can better identify the root causes of inequality and develop more effective strategies to promote fair and inclusive growth for all. This foundational concept is vital for a comprehensive and accurate understanding of demographic and developmental trends in the world today.

201. (B) In many societies, men have higher mortality rates at most ages, but women in some age groups face high risks from childbirth.
Patterns of death in a population are influenced by both biological characteristics and the social environment in which people live. While men often face higher mortality risks due to lifestyle factors and accidents, women in certain regions face significant health risks related to their reproductive roles. These specific challenges in pregnancy and delivery can lead to higher death rates for women during their childbearing years. Recognizing these distinct patterns is essential for developing healthcare strategies that are effective and meet the unique needs of all members of society, fostering better overall health and survival for everyone.

202. (B) It is relevant in the context of family planning programs, women's health, and the differential use of male/female methods.
The study of birth control methods is a key part of reproductive health and population research, as it directly relates to the ability of individuals and couples to manage their own fertility. This involves more than just medical technology; it also includes analyzing how these tools are used and who carries the primary responsibility for family planning within a society. By investigating the availability and use of both male and female methods, health programs can more effectively support informed choices and improve overall well-being. This broad perspective is essential for creating inclusive and fair health policies that address the diverse needs of all people.

203. (A) P-3, Q-2, R-4, S-1
Social and economic concepts are often used to describe the status and actions of individuals within a changing environment. This includes having legal rights to resources, the capacity to act as an independent agent, and the degree of control one has over their own life decisions. At the same time, many people face vulnerability due to economic risks or precarious jobs.

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disparities in the workforce and the unique reproductive health challenges faced by young people. Similarly, measuring empowerment and classifying different types of disabilities are central areas of study. By categorizing these issues, researchers and policymakers can develop more effective and targeted strategies that address the root causes of inequality and support the well-being and social inclusion of all diverse members of the population throughout their lives.

169. (B) The legal rules governing how property is passed down, which can be a major source of gender inequality.
Legal frameworks that determine who can inherit property are a significant factor in shaping economic disparities between men and women. When traditional or formal laws prioritize male heirs, they limit the ability of women to accumulate the assets needed for an independent life and for investment in their own and their families' futures. These rules are a fundamental source of inequality, affecting the distribution of wealth and influence across generations. Addressing these legal biases is a key step toward promoting greater economic fairness and ensuring that all people have an equal foundation for their development.

170. (D) All of the above.
Globalization is a multifaceted process that significantly alters economic activities and social roles, creating new patterns of work and movement. For many people, these changes offer new opportunities but also introduce fresh risks, such as increased vulnerability in precarious or unregulated jobs. These dynamics are often linked to existing divisions in the labor market and can have profound impacts on how and why different people migrate. Analyzing these complex interactions is essential for understanding how global economic shifts influence the social status and overall well-being of all diverse groups within the modern world population.

171. (B) Women and children often spend more time indoors and near the cooking area, leading to higher exposure.
The health impact of the home environment is often mediated by the traditional roles and daily routines of its residents. In many cultures, women and young children are more likely to be exposed to harmful indoor air pollution from traditional cooking fuels because of their responsibilities in the home. This differential impact highlights how social roles and physical environments combine to create specific health risks. Recognizing these patterns is essential for designing better housing and health interventions that target the root causes of illness and improve the overall well-being of all household members.

172. (A) Achieve gender equality by ensuring that the concerns and experiences of both women and men are integral to all societal planning.
Gender mainstreaming is a strategic approach designed to transform the way policies and programs are developed by making equality a core goal in every sector of society. The objective is to ensure that the different needs and perspectives of all people are considered from the beginning of any planning process. This integration helps to prevent policies that unintentionally reinforce existing inequalities and ensures that all members of a community benefit fairly from social and economic progress. By making equality a routine part of all organizational activities, societies can work toward more sustainable and inclusive development for everyone.

173. (B) The examination of disparities between men and women in social, economic, cultural, and health spheres.
Research into gender inequality focuses on identifying and understanding the systematic differences in opportunities and outcomes between men and women across all areas of life. This includes analyzing disparities in pay, access to resources like education and healthcare, and participation in political and household decision-making. By investigating these gaps, societies can better understand the root causes of discrimination and develop the targeted policies and social changes needed to promote greater fairness and ensure that all individuals have an equal chance to succeed and thrive within their communities and the broader nation.

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174. (B) A woman being able to choose her preferred method of family planning after receiving full information.
Autonomy in a healthcare context describes the ability of an individual to exercise independent choice and control over their own body and

these vital roles. Comprehensive work profiling is needed to make all forms of labor visible and to ensure fair recognition for everyone's contributions.

162. (B) 2, 3 and 4
Integrating a gender perspective into different sectors involves specific actions tailored to the unique challenges of each field. This includes creating school curricula that are free from stereotypes and promoting fair pay and balanced policies in the workplace. In agriculture, it can mean ensuring equal access to resources like land for both men and women. Collectively, these efforts are part of a strategy to make equality a Routine goal of all developmental activities, ensuring that policies across various areas of life effectively address the different needs and experiences of all members of the population.

163. (A) Women's status and population trends like fertility and child mortality.
Improving the social and economic position of women has direct and significant impacts on broader demographic patterns. When women are more empowered and educated, they often make different choices regarding family size and the health of their children, which can lead to lower fertility rates and better child survival. These links show that social empowerment is a key driver of positive demographic changes. Understanding these connections is essential for developing comprehensive developmental policies that promote the well-being of all individuals and lead to more sustainable and fair outcomes for the entire community.

164. (B) The total number of people identified as physically challenged in a given area.
Measuring the total size of a specific group, such as individuals with disabilities, is a fundamental part of demographic research. This count provides the baseline data needed for effective social planning and for the fair distribution of resources like healthcare, education, and rehabilitation services. By understanding how many people are living with impairments in a particular region, governments and social organizations can better anticipate the needs of the population and ensure that everyone has access to the support they need to participate fully in the life of their community and society.

165. (D) Statement I is false, but Statement II is true.
Marginalized communities such as Scheduled Castes and Scheduled Tribes are not identical; each has its own unique demographic characteristics and social history. Effective population analysis requires a separate look at the size, growth, and distribution of each group to understand their specific needs and challenges. Monitoring the results of targeted developmental plans for these communities is also essential for assessing progress and ensuring inclusive growth. This detailed approach is necessary for creating social policies that are truly fair and effective for all the diverse segments of a nation's population.

166. (B) The social and cultural practice of son preference and sex-selective abortion.
Significant imbalances in the ratio of boys to girls born in a population are often an indicator of deep-seated social biases. In many regions, the desire for male children leads to interventions that artificially alter the natural biological balance, which can have long-term consequences for the overall demographic structure. Recognizing these patterns is essential for identifying areas where gender-based discrimination is most severe and for developing social and educational strategies that promote the equal value of all children, regardless of their sex, to ensure a more balanced and fair future society.

167. (C) Social media followers
The economic development of individuals is driven by their access to and control over key assets that provide stability and opportunity. This includes legal rights to own land, access to financial services like credit, and entitlements to essential resources like education and healthcare. These factors are central to determining an individual's economic status and their ability to participate fully in the development of their community and nation. While digital influence is part of modern life, it is not typically used as a primary indicator of systemic economic empowerment or social inequality in demographic and development research.

168. (B) P-2, Q-3, R-1, S-4
Various social and health issues are associated with specific demographic themes and groups, requiring a range of research focuses and policy interventions. This includes analyzing economic

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appropriate education and health services is vital for supporting young people during this transition. By focusing on these core health and nutrition concerns, societies can help ensure that adolescents develop into healthy, informed, and productive adults who can contribute fully to the future of their communities.

181. (C) It allows them to start or expand businesses and generate independent income.
Having fair and equal access to financial resources like credit is a key factor in promoting economic independence and empowerment. For many people, especially those in disadvantaged positions, the ability to secure capital is essential for starting small businesses or investing in tools that can generate income and improve their families' standard of living. When barriers to credit are removed, individuals gain more control over their own lives and can participate more fully in the economic development of their communities. This access is a fundamental part of building a more equitable society where everyone has the opportunity to achieve economic security.

182. (B) The statistical invisibility of women's economic contributions, especially in the unpaid and informal sectors.
A significant portion of economic labor, particularly the work done by women in domestic roles and the informal sector, is often not counted in national statistics. This "statistical invisibility" means that their true contribution to the well-being and productivity of society is frequently devalued or ignored. Creating detailed work profiles is an essential step toward making all forms of labor visible and ensuring that social and economic policies are based on a realistic understanding of everyone's contributions. This recognition is vital for promoting fair labor practices and for supporting the economic status and rights of all workers in diverse societies.

183. (C) A large proportion of women workers in developing countries are found in this sector, often in precarious conditions.
The informal sector is a major source of work for many people, but it is often characterized by a lack of legal protections and very low job security. In many developing nations, women are overrepresented in this type of labor, where they may face low wages and an absence of important benefits like health insurance or paid leave. This concentration in unregulated jobs makes their economic position vulnerable to shocks and limits their long-term stability. Understanding these patterns is crucial for developing policies that provide better support and protection for all workers who operate outside the formal labor market.

184. (B) Some groups, potentially including certain categories of female workers, may be pushed to the fringes of the new economy.
In a globalized world, not all workers benefit equally from economic changes, and some groups can find themselves excluded from new opportunities. Marginalization occurs when people in low-skilled or informal sectors lack the resources or protections needed to compete in the global market, often leading to insecure jobs and lower social status. For many women, this can mean being concentrated at the edges of the economy with little influence or security. Recognizing this risk is essential for creating more inclusive policies that protect vulnerable workers and ensure that the benefits of global progress reach all parts of society.

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185. (B) A drought forces girls to drop out of school to fetch water from farther away, while boys' education is unaffected.
Environmental problems do not impact all community members equally, as existing social roles often determine the level of vulnerability to resource scarcity. When resources like water become difficult to find, the increased burden of collection often falls on specific family members, such as girls, which can disrupt their education and future prospects. This differential impact highlights how environmental degradation can worsen social and gender-based inequalities. Understanding these patterns is essential for developing fair adaptation strategies that protect all members of a community and ensure that development goals are not undermined by the consequences of a changing environment.

186. (B) Designing a national health survey that collects and analyzes data disaggregated by sex to understand different health needs and access issues.
Integrating a gender perspective into the health sector involves systematically collecting and

medical decisions. This is most clear when someone has access to all the necessary information and is then able to make a choice that is right for them, without coercion from others. High levels of autonomy are essential for positive health outcomes and are a key indicator of an individual's overall status and empowerment within their society. Promoting the capacity for independent choice is a vital part of supporting the reproductive rights and well-being of all people.

175. (A) Both A and R are true and R is the correct explanation of A.
Using an official classification system for individuals with disabilities is an essential administrative tool for national planning and for the fair distribution of support services. By categorizing different types of impairments, governments can more accurately identify the specific needs of the population and design rehabilitation, education, and welfare programs that are appropriately targeted to meet those needs. This systematic approach ensures that resources are used effectively and that all people with disabilities have access to the specific support required for their well-being and inclusion in the social and economic life of their country.

176. (A) Age-sex structure
Social preferences regarding the sex of children can have a profound impact on the fundamental composition of a population. When societies strongly value one sex over the other, it can lead to practices that artificially alter the natural balance of males to females. This imbalance is most visible in the age-sex structure, particularly at younger ages, and can have long-term consequences for the overall demographic profile and social stability of the nation. Monitoring these patterns is essential for identifying and addressing deep-seated gender biases that shape the future development and structure of a population across generations.

177. (D) Statement I is false, but Statement II is true.
The history of how gender roles are constructed shows that they are not fixed and do not follow a single, uniform path of change in all societies. Instead, gender relations are shaped by the specific social, economic, and political contexts of different times and places, leading to diverse and complex patterns of evolution. Understanding this historical perspective is essential for recognizing that current norms are not permanent and can be changed. This view allows for a deeper analysis of how power and opportunities are distributed and how societies can move toward greater equality in the future.

178. (A) To emphasize that reproductive health is a societal issue, not just a 'woman's issue'.
A modern approach to reproductive health recognizes that it is a broad concern that affects both men and women throughout their lives. By focusing on the roles and needs of both sexes, health programs can more effectively promote safe and responsible behaviors and ensure that all individuals have the information and support needed for informed decision-making. This holistic view moves away from placing the entire burden of family planning on women and recognizes that achieving positive health outcomes requires the participation and well-being of all members of society, fostering a more inclusive and effective healthcare system for everyone.

179. (B) Higher rates of death from accidents and violence.
Socially constructed norms for men can significantly influence their health behaviors and risk profiles. Expectations that emphasize toughness and physical bravado often lead to a higher likelihood of being involved in dangerous activities, accidents, or acts of violence, which are major contributors to the higher mortality rates observed among men in many populations. Recognizing the link between these gendered expectations and patterns of injury and death is essential for developing public health strategies that address the root social causes of these health problems and promote safer and more responsible behaviors for the male population.

180. (C) 1, 2, 3 and 4
The years of adolescence are marked by a range of important developmental and social milestones that significantly impact an individual's long-term health and well-being. This includes the physical changes of puberty, the initiation of sexual activity, and the various risks and consequences associated with early pregnancy. Addressing these diverse issues through

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192. (B) The establishment of "remittance corridors" where male migration is high, leading to a "feminization of agriculture" back home.
The movement of specific family members for work can lead to significant changes in social roles and economic responsibilities within the communities they leave behind. For example, in areas with high male migration, those who stay behind, such as women, may take on new roles in agriculture and local management that were previously handled by men. This shift can impact family dynamics and the local economy in complex ways. Analyzing these gendered impacts of migration is essential for understanding how population movements reshape social structures and for developing supportive policies for the families and communities affected by these changes.

193. (C) Their reproductive role and lower social status.
Women in many developing regions face a specific set of health challenges that are driven by both their biological roles and the social inequalities they face. A large portion of their health burden is related to the risks of pregnancy and childbirth, which are often worsened by poor nutrition, limited education, and unequal access to healthcare. This lower overall status can limit their ability to make informed choices about their own health and lives. Addressing these challenges requires a comprehensive approach that targets both medical needs and the underlying social disparities that affect the well-being and survival of the female population.

194. (C) Both A and B.
The use of different birth control methods in a population is influenced by both biological availability and social patterns of responsibility. While many methods are designed for use by a specific sex, the overall trend of who actually uses these tools is shaped by gendered expectations and power dynamics within relationships and health systems. Understanding these differentials in use is essential for identifying where family planning burdens are placed and for developing more balanced and inclusive programs that involve both partners. This broad perspective helps ensure that reproductive health is a shared responsibility, leading to more effective and fair health outcomes.

195. (A) Gender dimension of economic development
Analyzing how different groups participate in and benefit from national growth involves looking at several key economic factors. This includes command over major assets like land, access to financial services like credit, and the recognition and fair measurement of all types of work, including labor in the informal and domestic sectors. Additionally, ensuring fair pay and providing essential benefits like maternity leave are vital parts of this process. Collectively, these elements determine the economic status of individuals and are essential for understanding how social roles and systemic inequalities influence the overall developmental outcomes for different segments of the population.

196. (A) Are active agents who shape their own lives.
Individual agency describes the capacity of people to act independently and make choices that influence their own futures, even within the constraints of their social environment. In a changing world, this can involve using new economic opportunities or social connections to negotiate for better conditions and a greater voice within families and communities. Understanding that people are active participants in their own lives, rather than just passive recipients of change, is essential for a true analysis of social and demographic trends. This focus on agency and empowerment helps identify the pathways through which individuals can transform their status and well-being.

197. (B) Factors like kitchen smoke or distance to a water source can affect men and women differently due to the gendered division of labor.
The health impact of the home environment is often shaped by the different tasks and routines of its residents. Because of the traditional division of labor, certain family members may be more exposed to health risks within the household, such as harmful smoke from traditional fuels or the physical strain of carrying water from distant sources. This differential impact highlights how social roles and physical conditions combine to shape the well-being of individuals. Recognizing these patterns is essential for designing better housing and health interventions that address

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149. (D) All of the above.
Reproductive health is a comprehensive issue that concerns the well-being and responsible behavior of both men and women throughout their lives. For men, this involves addressing fertility concerns, preventing the spread of infections, and encouraging attitudes that support informed family planning and safe practices. By focusing on these varied aspects, health programs can more effectively promote the overall well-being of individuals and families. Recognizing men's roles and needs is essential for a holistic and successful approach to reproductive health that benefits all members of society and leads to better community outcomes.

150. (C) 1, 3 and 4
The years of adolescence are a critical period marked by significant physical development and the emergence of new health and social challenges. This includes the changes of puberty and the start of sexual activity, both of which have important implications for future well-being. Health and nutrition also play a vital role during these years, as they set the foundation for adulthood. Addressing these varied issues through education and supportive services is essential for ensuring that all young people can navigate this transition safely and reach their full potential as healthy members of their communities.

151. (A) The difference in pay between men and women, often for the same or comparable work.
Pay disparities based on gender are a significant indicator of systemic inequality within the labor market. This occurs when men and women do not receive the same compensation for performing work of equal value or for similar roles. Such gaps are often driven by social norms, discrimination, and the segregation of jobs into "male" and "female" categories. Addressing these differentials is a key part of promoting economic fairness and ensuring that all workers are valued and rewarded equally for their contributions, regardless of their gender or background.

152. (D) Statement I is false, but Statement II is true.
The impact of global economic integration is not the same for everyone; it creates a diverse range of outcomes based on a person's skills and status. While some individuals gain more opportunities and income, others may find themselves in more precarious and unprotected roles. This complexity means that globalization can both empower and increase the vulnerability of different groups within the population. Recognizing these varied impacts is essential for developing social and economic policies that help ensure the benefits of global change are shared more fairly and that vulnerable workers are protected.

153. (A) Control and benefit from things like land, credit, and income.
Economic empowerment for women is central to their overall status and depends on their ability to command the resources needed for an independent life. This involves more than just earning an income; it also includes having legal rights to own land and access to financial services like credit. When women have control over these key assets, they gain more decision-making power within their families and communities. Analyzing these patterns of access is essential for understanding the root causes of gender-based inequality and for designing policies that promote fair development.

154. (B) Rural areas where water collection from distant sources is common.
Environmental problems like a declining water table have a direct and disproportionate impact on those responsible for the daily collection of resources for the home. In many rural communities, this task falls primarily on women and girls, who must spend more time and energy traveling to find water as local sources dry up. This increased burden can have negative effects on their health and limit their time for education or other activities. Understanding these gendered impacts is essential for developing fair and effective water management and environmental adaptation strategies in affected regions.

155. (B) Creating separate, isolated projects for women that have no connection to mainstream development.
Gender mainstreaming is a strategy intended to bring the concerns and experiences of both men and women into the center of all policy-making and developmental activities. The goal is to ensure that equality is not treated as a separate, niche issue but is a Routine part of all societal planning and resource allocation. By integrating a gender

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Understanding how these different factors interact is essential for analyzing the impacts of global change on various population groups. This framework helps identify the pathways to empowerment and the challenges that must be addressed to ensure a fairer and more equitable society.

204. (B) The quality and nature of the domestic space affects the health, workload, and safety of men and women differently.
The conditions within the household can have different impacts on residents based on their daily routines and the roles they play within the family. Because of the traditional division of labor, certain family members may be more exposed to health risks from indoor air pollution or have their workload increased by poor access to water and sanitation. Recognizing this differential impact is essential for designing better housing and social policies that address the specific needs and vulnerabilities associated with home life. This focus on the home environment helps build a safer and more supportive space for the health and well-being of all individuals.

205. (C) Gender mainstreaming
Ensuring that the needs and experiences of all people are a Routine part of policy and planning is a key strategy for promoting social equality. This involves analyzing the different impacts of projects, removing stereotypes from education, and creating balanced workplace policies that support all employees. By integrating these perspectives across all sectors, from agriculture to the private industry, societies can more effectively address systemic disparities and ensure that everyone has an equal opportunity to benefit from and participate in national development. These efforts are central to building a more inclusive and fair environment where equality is a core goal in every area of societal organization.

206. (C) Women's autonomy and empowerment.
The social and economic position of women has direct and significant impacts on the broader demographic trends of a nation. When women are more empowered with education and the power to make independent choices about their own lives and health, it leads to different patterns in family size and the overall well-being of households. High levels of autonomy are closely linked to improved child survival and more sustainable population growth. Recognizing these demographic implications is essential for understanding the full impact of social policies aimed at improving the status of all members of society, fostering a more equitable and healthy future for everyone.

207. (D) Distribution
Analyzing where specific groups of people are located across different regions is a fundamental part of demographic and geographic research. For indigenous and tribal communities, this involves mapping their concentration in various parts of the country to understand their unique settlement patterns. This information is crucial for ensuring that developmental resources and social programs are effectively targeted to the areas where these communities reside. By understanding the spatial distribution of a population, governments can better address regional disparities and meet the specific needs of these groups in a way that respects their traditional environments and current social and economic realities.

208. (D) Statement I is false, but Statement II is true.
Developmental initiatives for marginalized groups are not isolated from the broader population; they are intended to drive changes that affect demographic patterns like birth and death rates. Effective social planning requires a clear understanding of how these programs for Scheduled Castes, Scheduled Tribes, and individuals with disabilities impact the overall well-being and growth of these communities. By monitoring these outcomes, researchers can assess whether policies are successfully reducing inequality and improving lives. This link between targeted interventions and demographic changes is a key area of study for ensuring more equitable and inclusive developmental outcomes for all diverse segments of a nation's population.

209. (B) Socially constructed and variable across time and culture.
The history of how gender roles are formed shows that the expectations placed on different people are not natural or unchangeable. Instead, these roles have been constantly redefined as societies experience economic shifts, political changes, and cultural transformations. Recognizing this

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identifying the systemic barriers to equality in employment and for developing policies that promote fair pay and equal access to all types of jobs. This focus on how work is divided helps in understanding the root causes of gender-based labor disparities and is a vital part of efforts to create a more balanced and fair economic environment for all workers in the city.

243. (B) Common grazing lands used by women to feed livestock are converted to a cash crop plantation controlled by men.
Changes in how land is used can have significant and varied impacts on different members of a community based on their traditional roles and access to resources. When land that was previously used for common activities is shifted to new types of production, it can disrupt the livelihoods and status of those who were dependent on the old system. These shifts often have a differential impact, affecting the economic security and workload of different groups in diverse ways. Understanding these patterns is essential for analyzing the social consequences of economic change and for developing fair and inclusive land use policies that protect the rights and well-being of all people within the community and ensure that development is truly sustainable.

244. (B) Inform policy and improve the effectiveness of future interventions.
Systematically evaluating the results of social and developmental initiatives is essential for determining if these policies are achieving their goals and for identifying areas where more work is needed. For marginalized communities, this means monitoring changes in well-being and demographic patterns to see the real-world impact of programs over time. This analysis provides the feedback needed to refine and improve future strategies, ensuring that resources are used effectively to promote social and economic inclusion. This commitment to evaluating the impact of interventions is a vital part of building a more fair and efficient system of social support that truly meets the diverse needs of all members of the population across the nation.

245. (D) Statement I is false, but Statement II is true.
In population studies, it is essential to distinguish between a focus on specific individuals and the broader analysis of the relations and expectations that define social roles for everyone. While addressing the unique challenges and status of women is a central part of research, modern analysis uses a broader framework to investigate how social constructs of masculinity and femininity interact to shape demographic behaviors and outcomes. This comprehensive view allows for a deeper understanding of the root causes of inequality and for the design of more effective social policies that promote fair and inclusive growth for all members of the community, recognizing that everyone's life is influenced by the social structures in which they live.

246. (A) These programs have disproportionately placed the responsibility of contraception on women.
The history of family planning initiatives shows a clear pattern where women have often been the primary targets for information and services, placing the main responsibility for managing fertility on them. This focus can sometimes ignore the vital role and needs of men in reproductive health and family decision-making. Recognizing this historical trend is important for understanding modern efforts to build more balanced and inclusive programs that involve both partners. By promoting shared responsibility and addressing the health needs of all people, societies can work toward more effective and fair reproductive health outcomes that support the well-being and safety of all individuals and families throughout the diverse segments of the entire population.

247. (A) Economic inequality
Significant disparities in pay based on social roles and categories are a key indicator of systemic unfairness within the economy. This happens when different people do not receive equal reward for the same or comparable work, often because of social norms or the way certain jobs are traditionally valued. Such gaps are a major source of overall economic inequality and can limit the financial stability and opportunities of affected groups. Addressing these pay differentials is an essential part of promoting greater fairness and ensuring that all workers are rewarded equally for their contributions. This focus on equitable compensation is vital for building a more

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of authority. This often leads to a pattern where women are overrepresented in lower-paid, less secure sectors and face invisible barriers that prevent them from moving into high-level leadership positions. Recognizing these patterns of segregation is essential for identifying the systemic challenges to equality in employment and for developing policies that promote fair pay and equal opportunities for advancement for all workers. This focus on labor market divisions helps identify where more effort is needed to ensure that all members of the urban workforce are treated fairly.

216. (B) Due to their social roles and economic positions, men and women are affected differently by issues like deforestation or water scarcity.
Environmental problems do not impact all community members in the same way, as social roles often determine the level of vulnerability to changes in natural resources. Because men and women often have different responsibilities for resource management and household tasks, they are impacted differently by issues like deforestation or water scarcity. Recognizing these varied effects is essential for understanding the full social consequences of environmental degradation and for developing inclusive strategies that help all members of a community adapt to changing conditions. This focus on the different impacts of environmental change ensures that adaptation and development policies are fair and effective for everyone in the affected population.

217. (B) The relative empowerment of women and men in a country, focusing on political and economic participation.
Various indices are used to evaluate the degree to which different social groups can influence and participate in the public and economic life of their country. By looking at their representation in government and high-level professional roles, along with their share of earned income, these tools provide a clear picture of power disparities. This focus on active participation and decision-making helps to identify where more progress is needed to achieve true equality in terms of influence and opportunity. Measuring these gaps is a vital part of international efforts to promote fair development and to ensure that all members of society have an equal voice in shaping their own lives and communities.

218. (A) Program evaluation from a demographic perspective.
Evaluating the results of social and developmental initiatives involves monitoring how these policies affect the fundamental characteristics of a community over time. For marginalized groups, this means looking at changes in patterns of birth, death, and well-being as a way to assess whether the programs are meeting their goals of reducing inequality and improving lives. This systematic analysis provides the information needed to refine future interventions and to ensure that developmental resources are used effectively to promote social and economic inclusion. This demographic focus is essential for understanding the real-world impact of social policies on the diverse people they are intended to serve throughout the nation.

219. (B) Providing targeted and appropriate aid and support.
Using a detailed classification system for people with disabilities is an essential part of ensuring that everyone receives the specific help they need. Because different impairments require different types of medical care, assistive technology, and vocational training, categorizing these needs allows for more effective and fair social planning. Rather than a one-size-fits-all approach, this strategy ensures that the unique challenges faced by each person are addressed, fostering an environment that helps everyone participate fully in the social and economic life of their community. This focus on targeted support is vital for building a more inclusive society where all individuals have the opportunity to reach their full potential.

220. (A) Both A and R are true and R is the correct explanation of A.
Reproductive health is a holistic concern that depends on the well-being and responsible behavior of both men and women throughout their lives. Men's health and attitudes significantly influence a couple's reproductive choices and the overall success of family planning programs. Furthermore, men have their own health needs that should be addressed. By actively including men in these initiatives, societies can promote

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address the root social causes of these problems and encourage safer and more responsible behaviors for the male population in all diverse environments.

232. (A) The intersection of women's reproductive role and their economic participation.
Ensuring that women are supported during pregnancy and after childbirth is essential for fostering a fair environment where they can balance their biological roles with their economic contributions. Maternity benefits provide the job security and income needed during this critical time, helping to prevent economic hardship and encouraging continued participation in the formal labor force. These policies are a key indicator of a supportive work environment and are essential for promoting social equality and well-being. By providing such benefits, societies can work toward more sustainable and inclusive development that recognizes and values the diverse roles played by all its members throughout their professional and personal lives.

233. (A) From unpaid agricultural/domestic work to paid, often low-skilled, manufacturing or service work.
Globalization drives significant structural changes in how economies operate, leading many individuals to move from traditional, often unpaid labor in agriculture and the home into new forms of paid employment. While this shift can provide an independent source of income and new opportunities, the work is often concentrated in low-skilled sectors with little job security or long-term prospects. Understanding these changing patterns is essential for analyzing how global economic forces influence employment trends and the social status of different groups within the population. This focus on the shifting nature of work helps identify the pathways to economic stability as well as the risks that must be managed in a changing world economy.

234. (C) Both public and private workplaces.
Addressing gender issues in the workplace involves creating an environment that is fair and supportive for all employees across all types of organizations. This includes implementing strategies to ensure equality is considered in both government and private industry policies. By focusing on areas such as fair pay, safety, and a balanced work environment, societies can work to remove the barriers that hinder participation and progress for different members of the workforce. These efforts are not just for specific groups but are aimed at building a more equitable and professional organizational culture for everyone, recognizing that workplace dynamics influence the status and experiences of all people throughout their careers and across diverse economic sectors.

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235. (D) Status of women.
The overall position of women within a society is determined by a range of social, economic, and health factors. This includes their level of education, their ability to survive and thrive during pregnancy and childbirth, and the presence of social challenges such as violence within the home. Together, these indicators reflect the degree to which women are valued and empowered to participate fully in all aspects of life. High levels of inequality across these areas point to a lower social status that limits the opportunities and well-being of the female population. Addressing these systemic issues is essential for promoting greater fairness and for improving the overall demographic health and development of the nation.

236. (A) Size, growth, composition, and distribution.
Analyzing a specific segment of the population involves looking at several fundamental demographic measures that describe its structure and patterns over time. This includes monitoring the total number of people in the group, how their numbers are changing, and their breakdown by characteristics like age and sex. Additionally, investigating where the group is located geographically is crucial for understanding its unique patterns of residence. Together, these metrics provide a baseline for social planning and for ensures that developmental resources are effectively targeted to meet the actual needs of the community. This systematic approach is essential for assessing the social and economic status of all diverse groups within the nation's population.

237. (B) Empowerment and inclusion
Modern developmental initiatives for people with disabilities are focused on fostering independence and ensuring that everyone can participate

of one's first sexual experience, which can have significant consequences for reproductive health and social status. Addressing these issues through education and appropriate health services is vital for supporting young people during this critical transition. By focusing on the circumstances of these experiences, such as age and the use of protective measures, societies can help ensure that adolescents make informed and safe choices that support their long-term health and development. This focus is essential for building healthier and more informed communities for the next generation.

227. (D) All of the above.
The process of global economic integration can create significant instability and risk for those working in sectors that are unregulated or lack formal protections. This vulnerability often manifests as job insecurity, very low pay, and an absence of important benefits or legal recourse. For many women in these roles, the risk of experiencing poor working conditions or harassment is also high. Recognizing these varied challenges is essential for developing social and economic policies that provide better support and protection for all workers in a globalized economy. This focus helps ensure that economic shifts do not lead to greater exploitation and that all workers have the security and dignity needed for their well-being.

228. (D) Statement I is false, but Statement II is true.
The informal sector is marked by a lack of the formal monitoring and legal protections that are found in more regulated types of employment. For many people, this labor provides a vital source of income but also carries high risks due to low wages and the total absence of social benefits like health insurance or job security. This precariousness makes it difficult for workers to achieve long-term economic stability and highlights the need for social policies that provide better protection and support for those who operate outside the formal labor market. Addressing these vulnerabilities is a key part of promoting fair development and social safety nets for all workers in diverse societies.

229. (A) The major morbidity and mortality burden on women.
Women in many regions face specific health risks that are driven by both their physical roles and the social inequalities they encounter throughout their lives. A large part of this burden is related to the dangers of pregnancy and childbirth, which can lead to high rates of illness and mortality. Addressing these challenges through targeted health interventions is essential for improving the well-being and survival of the female population. This comprehensive approach is necessary for reducing overall death rates and for ensuring that all members of society have access to the quality healthcare and support needed for their survival and health, fostering a more stable and resilient population for the nation.

230. (B) P-3, Q-4, R-2, S-1
Social roles and expectations profoundly influence several fundamental demographic events, from birth and movement to patterns of survival. This includes how levels of education and autonomy shape reproductive choices and how gender norms influence why and where people move. Additionally, lifestyle behaviors and social preferences can alter patterns of death and the balance of boys to girls within a population. Understanding these complex interactions is essential for accurately analyzing demographic trends and for designing social and health policies that are effective and meet the unique needs of all diverse groups. This framework provides a holistic view of how social structures shape the development and structure of a population over time.

231. (C) Ignore symptoms, avoid check-ups, and engage in risky behaviors.
Socially constructed expectations for men can have a profound impact on their health behaviors and risk profiles. Norms that emphasize self-reliance and toughness often lead men to engage in dangerous activities and to view seeking medical help as a sign of weakness. This can result in ignoring serious symptoms or avoiding necessary health check-ups, which increases the risk of chronic illness and premature death. Recognizing the link between these gendered expectations and patterns of health is essential for developing public health strategies that

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fluidity is important for understanding that current gender norms are the product of specific historical contexts and can be challenged to promote greater equality. This perspective allows for a deeper analysis of how power and opportunities are distributed and how societies can move toward more fair and inclusive social arrangements that benefit all members of the community throughout their lives and across different eras.

210. (D) All of the above.
The health challenges faced by women in many regions are the result of an interaction between their biological roles and the social inequalities they face. This includes the risks associated with pregnancy and delivery, as well as the health consequences of poor nutrition and the prevalence of violence within the home. Together, these factors create a significant burden of illness and mortality for the female population. Addressing these challenges requires a comprehensive approach that targets both medical needs and the underlying social disparities that affect well-being. This broad focus is essential for improving maternal survival and the overall health and status of all women in diverse societies.

211. (C) 1, 2, 3, 4 and 5
Men's health is influenced by several key factors that are often rooted in the social expectations and behavioral patterns associated with their gender. This includes the pressure to conform to certain ideals of masculinity, which can lead to higher rates of substance use and a greater likelihood of being involved in accidents or acts of violence. Collectively, these risk factors contribute to the higher mortality and illness rates observed among men in many different populations. Addressing these challenges requires a comprehensive strategy that considers how social roles and individual choices interact to shape the overall health and safety of the male population in both modern and traditional environments.

212. (A) They are in a transitional phase of life, which can make them more vulnerable.
The years of adolescence are a critical period of physical and social development where young people are particularly sensitive to their environment. This transition can make them more vulnerable to negative experiences such as abuse and maltreatment, which can have profound and lasting impacts on their physical and mental health. Addressing these challenges through protective social environments and supportive services is essential for ensuring that all adolescents can navigate this period safely and reach their full potential. Recognizing these risks as major concerns for the well-being of youth is vital for building healthier and more supportive communities for the next generation of adults in all societies.

213. (A) Economic independence is often a prerequisite for social and political empowerment.
Gaining command over the resources needed for a good life is a fundamental part of improving one's overall status and influence within society. For many people, particularly those in disadvantaged positions, economic independence provides the foundation for making independent choices and participating fully in political and social activities. When barriers to accessing assets like land and credit are removed, individuals gain more decision-making power within their own homes and local communities. This economic base is essential for a true and lasting empowerment that allows people to act as independent agents in shaping their own futures and contributing to the overall development of their nation.

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214. (C) The color of the national flag.
When analyzing the environment in which people work, researchers focus on several key factors that directly affect their safety, well-being, and ability to do their jobs fairly. This includes looking at workplace safety measures, hours of labor, and the provision of essential benefits like maternity leave that support a fair balance between work and family life. These conditions are central to ensuring a fair and equitable experience for all employees and are used as indicators of the overall quality of employment and social status. Broad symbolic elements of a nation are not typically used as primary measures of individual or group status in demographic and labor market studies.

215. (B) 'Feminization' of certain low-paid jobs and a 'glass ceiling' preventing women's promotion.
Labor markets in many cities are often divided in ways that concentrate men and women in different types of work and at different levels

fully in all aspects of social and economic life. This involves removing the physical and social barriers that prevent inclusion and providing the necessary support and rehabilitation needed for individual agency. The goal is to move beyond mere charity to build an environment where the physically challenged are empowered to contribute their talents and share in the benefits of national progress on an equal basis with others. By promoting this inclusive approach, societies can work to improve the quality of life and overall status of all individuals with impairments, fostering a more diverse and fair nation.

238. (C) It is a fixed, biological characteristic that does not change.
Understanding the difference between the physical traits of sex and the social roles of gender is a fundamental part of modern social and demographic analysis. While sex refers to biological characteristics, gender describes the expectations and norms that societies build around these differences. Because gender roles are learned and vary significantly across different cultures and throughout history, they are not permanent and can be changed to promote greater fairness. Recognizing this fluidity allows for a deeper investigation into how social structures shape the opportunities and experiences of all people. This perspective is essential for identifying the root causes of inequality and for fostering a more inclusive environment for everyone.

239. (C) A holistic concept that goes beyond just biology.
Reproductive health is defined as a state of complete physical, mental, and social well-being in all matters relating to the reproductive system. This broad perspective moves beyond the mere absence of disease to include the capacity to have a safe and fulfilling life and the freedom to make informed choices about having children. By focusing on all these dimensions, health programs can more effectively support the well-being of both men and women throughout their lives. Recognizing that reproductive health is influenced by social status and access to information is essential for building a healthcare system that addresses the diverse needs of the entire population and leads to better community health and individual safety.

240. (B) A wide range of methods from condoms and IUDs to sterilization and emergency contraception.
The field of birth control has seen significant development over the years, leading to a wide variety of medical and physical means for individuals and couples to manage their fertility. This broad spectrum includes short-term barrier methods, long-acting hormonal options, and permanent procedures. Understanding the availability and use of these varied technologies is a central part of reproductive health research, as it directly relates to the ability of all people to make autonomous choices about their lives and health. This focus on the diverse range of options helps ensure that health programs can provide the support and information needed for informed family planning and for improving overall maternal and family well-being.

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241. (A) They can be a major barrier to women's accumulation of assets and economic security.
Legal and social rules that determine the transfer of property across generations are a significant factor in shaping the economic disparities between different people. When traditional or formal systems prioritize male heirs, they limit the ability of women to own the assets needed for an independent life and for investment in their own futures. These biases are a fundamental source of inequality, affecting the distribution of wealth and influence throughout society. Addressing these issues is a key part of promoting greater economic fairness and ensuring that all individuals have an equal foundation for their development. This focus on property rights is essential for building a more equitable society where everyone has the security and opportunity to thrive.

242. (A) Occupational segregation by gender.
Urban labor markets are often characterized by a division where men and women are concentrated in different types of work, which is often called occupational segregation. This pattern can lead to certain sectors being dominated by one sex and can influence pay levels and opportunities for advancement within different professions. Recognizing these divisions is essential for

better health outcomes, improve communication within families, and encourage more balanced and informed reproductive decisions. This inclusive approach is essential for a successful and comprehensive strategy that benefits the entire community and supports the health and safety of all individuals and families.

221. (B) A law that guarantees a girl's right to primary education.
Entitlements refer to the social and legal rights that enable individuals to command essential resources for their development and well-being. For example, formal rules that guarantee access to basic education provide a vital foundation for future opportunity and economic independence. When such rights are formalized and protected, they help to reduce systemic inequalities and empower individuals to participate more fully in their communities. Recognizing and ensuring these entitlements is a fundamental part of promoting social justice and for building a more equitable society where everyone has a fair chance to achieve their potential and contribute to the overall progress and growth of their nation.

222. (B) Gender inequality can be a major factor contributing to and exacerbating poverty for women.
The relationship between economic status and social roles is complex, as systematic disparities can both drive and worsen poverty for certain groups. When individuals have limited access to resources like education and high-paying jobs, or face legal barriers to owning assets, they are more likely to live in economic hardship. At the same time, poverty can further restrict their opportunities and power, creating a cycle of disadvantage. Addressing these underlying social inequalities is therefore a vital part of any effective strategy to reduce poverty and to promote more sustainable and inclusive economic development that benefits all members of society regardless of their background or status.

223. (D) 1, 2, 3 and 4
Gender mainstreaming is a strategic approach designed to transform the way policies are developed by making equality a central goal across all sectors of society. The objective is to ensure that the concerns and experiences of both men and women are considered in every area of planning, from health and education to infrastructure. This integration helps to prevent policies that unintentionally reinforce existing disparities and ensures that all members of a community benefit fairly from social and economic progress. By making equality a routine part of all organizational activities, societies can work toward more sustainable and inclusive development that effectively addresses the diverse needs of the entire population.

224. (A) Decision-making power.
Autonomy refers to the degree to which individuals can exercise independent control over their own choices and actions, particularly regarding their personal health and life goals. A key part of this is the power to participate fully in major decisions within the household and the broader community. High levels of autonomy are strongly linked to better well-being and more equitable social outcomes. Understanding and promoting the capacity for independent decision-making is a central part of supporting the status and rights of all individuals. This focus on empowerment helps to build a fairer society where everyone has a voice and the agency to shape their own future and well-being.

225. (B) Historical social and economic disadvantages.
Governments create specialized developmental initiatives to address the long-term systemic inequalities faced by certain marginalized groups. These programs for Scheduled Castes and Scheduled Tribes aim to improve their social and economic status by providing better access to resources like education and healthcare. By focusing policies on these groups, societies can work to reduce regional disparities and ensure that all members have equal opportunities for a good life. Evaluating the success of these efforts is essential for assessing progress and for refining future social policies to ensure that they effectively promote inclusion and fairness for everyone in the nation regardless of their historical or social background.

226. (B) The circumstances surrounding it (e.g., age, use of contraception, consent) have significant health implications.
The years of adolescence are marked by key events that shape a young person's future well-being and life path. This includes the circumstances

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inclusive economic environment where everyone has the opportunity to achieve economic security and status.

248. (B) Can actively navigate, negotiate, and resist the challenges and opportunities presented by globalization.
Individual agency refers to the capacity of people to act independently and to shape their own lives, even when faced with the broad constraints of a changing global economy. In a globalized world, this involves using new information and opportunities to negotiate for better conditions and to actively respond to both the risks and the benefits of global change. Understanding that people are active participants in their own development, rather than just passive subjects of international forces, is essential for a complete social and demographic analysis. This focus on agency and choice helps identify the ways in which individuals can work to transform their own status and contribute to the well-being and growth of their communities.

249. (C) Creating policies to address pay gaps, harassment, and promote work-life balance for all employees.
Promoting equality in the workplace involves a comprehensive strategy to ensure that all members of the workforce are treated fairly and have a safe and supportive environment. This includes developing policies to ensure equal pay for equal work, preventing all forms of harassment, and supporting a healthy balance between professional and personal life for everyone. By making these concerns a Routine part of organizational management, societies can work to remove the barriers that hinder the progress and well-being of different employees. This inclusive approach is essential for building a more professional and fair organizational culture that values the talents and contributions of all its members regardless of their background or role within the company.

250. (A) Planning for required infrastructure, healthcare, and educational facilities.
Monitoring the size, growth, and geographic distribution of people with disabilities is a fundamental part of effective national and regional planning. This information provides the baseline data needed to ensure that essential services like specialized healthcare, inclusive education, and rehabilitation facilities are distributed fairly and effectively to meet the actual needs of the population. By understanding where people with impairments are located and how their numbers are changing over time, governments and social organizations can better anticipate the resources required to support the inclusion and well-being of everyone. This data-driven approach is vital for building a more inclusive society where all individuals have the opportunity to participate fully and share in the benefits of national development.

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251. (B) Sex refers to biological differences, whereas gender is a socio-cultural construct.
The distinction relies on the idea that biological factors determine physiological traits, whereas social and cultural processes shape the roles and responsibilities assigned to individuals. This analytical framework allows researchers to separate innate physical characteristics from the fluid, negotiated identities and expectations that societies impose based on whether an individual is perceived as male or female.

252. (A) They have moved from a state of rigidity towards greater fluidity.
Historical perspectives indicate that societal expectations for men and women have shifted over time. Previously, these roles were often governed by strict patriarchal structures that enforced rigid definitions of behavior. In contemporary society, these understandings have become more contested and flexible, allowing for a broader and more diverse range of gender expressions and individual identities compared to the past.

253. (C) The meaning of gender is dynamic and subject to change through societal processes.
The concept of gender is characterized by its lack of a fixed or universal definition. Instead, it undergoes constant negotiation and redefinition through various social, political, and cultural interactions. This inherent dynamism means that what is considered masculine or feminine changes across different eras and cultures, reflecting the evolving priorities and values of the societies in which these constructs exist.

254. (D) Social hierarchies and power relations.
Socially constructed gender roles serve as critical tools for organizing society and distributing influence. By defining specific responsibilities and constraints for different groups, these constructs help establish and maintain complex social hierarchies. They also play a significant part in determining power relations within communities, influencing how individuals interact and how resources and authority are allocated among different societal members.

255. (C) It allows for an analysis of social phenomena beyond simple biological classifications.
Separating biological sex from social gender provides researchers with a vital framework for studying human populations. This tool enables a more nuanced analysis of social behaviors and outcomes that cannot be explained by biology alone. By looking beyond physiological differences, scholars can better understand how societal expectations influence demographic trends, economic participation, and the overall structure of various human communities.

256. (B) Gender norms and population components mutually influence each other.
The interaction between gender norms and demographic factors like fertility and migration is a two-way process. Socially constructed expectations regarding masculinity and femininity help shape population trends, while changes in population structure simultaneously impact existing gender relations. This reciprocal relationship ensures that demographic shifts and societal norms are deeply intertwined, each constantly influencing and reinforcing the other over time.

257. (D) Societal preference for male offspring.
Imbalances in the distribution of males and females within a population often arise from deep-seated societal biases. Specifically, a strong preference for male children can lead to harmful practices such as sex-selective abortion or female infanticide. These gender-based actions directly alter the natural composition of a population, resulting in a skewed age-sex structure that reflects underlying inequalities and cultural values.

258. (A) The degree of women's autonomy in decision-making.
Reproductive outcomes are significantly influenced by the level of agency women possess within their households and communities. When women have the power to make strategic life choices, they can better manage family size, child spacing, and contraceptive use. Therefore, their autonomy acts as a primary factor in determining overall fertility rates, directly impacting the demographic trajectory and health of a population.

259. (C) Gender-specific health risks and unequal healthcare access.
Differences in mortality rates between men and women are frequently linked to specific societal expectations and systemic inequalities. Men may face higher risks from occupational hazards or lifestyle choices associated with traditional masculinity. Conversely, women often suffer from risks related to maternal health or restricted access to medical services. These gendered experiences lead to distinct patterns of illness and death.

260. (A) The motivations, methods, and experiences of migration differ between genders.
Human movement across borders or regions is a deeply gendered phenomenon, shaped by varying roles and expectations assigned to men and women. They often embark on migration for different economic or social reasons and utilize distinct networks. Furthermore, the risks they encounter and the opportunities found in destinations are frequently influenced by gender, leading to diverse outcomes.

261. (D) The societal devaluation of females leading to sex-selective practices.
When the ratio of male to female births deviates significantly from the natural norm, it typically signals a societal bias against daughters. This devaluation leads to the use of medical technologies for sex selection, reflecting deep-rooted inequality. Such practices demonstrate how cultural preferences for male heirs can override biological patterns, significantly impacting the demographic health and social stability of a community.

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262. (B) Their reproductive roles and related health issues.
In many parts of the developing world, the health challenges faced by women are intricately linked to their biological and social roles in childbearing. High rates of maternal mortality and morbidity stem from the risks associated with pregnancy and delivery. These issues are further complicated by inadequate access to healthcare and specialized services, making reproductive health a central concern for women's survival.

263. (C) Underlying gender power imbalances in reproductive responsibilities.
The higher prevalence of female-centric contraceptive methods, such as sterilization, over male methods like vasectomy, highlights unequal power dynamics within relationships. It suggests that the burden of family planning is disproportionately placed on women. This disparity reflects a societal expectation where women are responsible for reproductive management, often without having the full autonomy or support to make those crucial decisions.

264. (D) Accidents related to high-risk occupations.
While women in the developing world face significant health risks, these are primarily concentrated in areas such as safe childbirth, maternal mortality, and reproductive tract infections. High-risk occupational accidents are typically associated with different demographic profiles or genders within specific labor contexts. Understanding these distinct health burdens is essential for developing targeted interventions that address the unique vulnerabilities of various population groups.

265. (A) It is disproportionately placed upon women.
Data on contraceptive usage indicates that women often bear the primary responsibility for managing family size and reproduction. The widespread use of female-focused medical interventions compared to male methods suggests a lack of shared responsibility. This trend points to underlying social structures that expect women to handle the consequences and labor of family planning, frequently impacting their overall health and life choices.

266. (B) Adolescent pregnancy and unsafe abortion.
Following the onset of puberty, young girls encounter specific risks that have profound long-term consequences. The physiological and social changes during this period make them vulnerable to early pregnancy and the dangers of unsafe medical procedures. These events can lead to severe health complications or social marginalization, highlighting the critical need for gender-sensitive reproductive health services and support for adolescents.

267. (B) Societal constructs of masculinity.
Many health issues affecting men are linked to the behaviors and identities expected of them by society. The pressure to conform to specific notions of masculinity often encourages high-risk activities, such as excessive alcohol consumption or tobacco use. These socially driven behaviors contribute significantly to the higher incidence of chronic illnesses and preventable deaths among men, starting from their adolescent years.

268. (A) They are often differentiated along gender lines.
The transition from childhood to adulthood is not a uniform experience for all young people. Instead, the health and nutritional challenges faced during adolescence are often shaped by gender. While both boys and girls face some common issues like nutritional deficiencies, their specific vulnerabilities—such as maternal risks for girls and lifestyle-related risks for boys—differ significantly due to biological and social factors.

269. (C) A greater propensity for risk-taking associated with masculine identity.
Societal expectations regarding manhood often reward or encourage behaviors that involve physical danger or bravado. This propensity for risk-taking, which is frequently internalized as part of a masculine identity, leads to a higher frequency of accidental injuries among men. These patterns manifest early in life and contribute to the distinct morbidity and mortality profiles observed between different gender groups in a population.

270. (D) Nutritional deficiencies.
Certain health challenges are common across gender boundaries during the adolescent period. Nutritional deficiencies represent a shared

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disparities. This approach aims for a society where both genders can participate in and benefit from development equally.

287. (C) A link to lower fertility and improved family well-being.
Enhancing the status and decision-making power of women has measurable effects on a country's population trends. When women are empowered, they are better able to make choices regarding their reproductive health, which often leads to a decline in fertility rates. Additionally, empowerment is closely associated with better health outcomes for children and an overall improvement in the quality of life for families.

288. (B) Gender inequality in economic and political participation and decision-making.
The Gender Empowerment Measure is a specialized tool used to track progress in achieving equality. It moves beyond basic health and education indicators to focus on how much influence women have in society. By measuring disparities in political representation, professional leadership roles, and earned income, this index provides a clear picture of the extent to which women are involved in strategic decision-making.

289. (D) Make and act upon strategic life choices.
In the context of development, empowerment refers to the capacity of individuals to exercise control over their own lives. This involves the ability to formulate and act upon important decisions regarding their education, career, and health. When women gain this autonomy, they can challenge traditional constraints and actively shape their own futures, which is essential for both individual well-being and broader societal progress.

290. (A) In a variety of sectors including agriculture, health, and education.
The strategy of integrating a gender perspective is not limited to a single field but is applied across a wide range of developmental areas. From improving agricultural practices and ensuring equal access to schooling to enhancing healthcare services and workplace conditions, this approach seeks to address inequalities everywhere. This broad application ensures that gender considerations become a standard part of all public and private initiatives.

291. (C) To address their historical social and economic marginalization.
Specific development initiatives are created for Scheduled Castes and Scheduled Tribes to address the long-term disadvantages these communities have faced. Historically, these groups have been excluded from social and economic opportunities, leading to lower levels of development. Targeted programs aim to correct these injustices by providing the necessary resources and support to help these populations integrate more fully into society.

292. (A) Their size, growth, composition, and distribution.
Studying special population groups requires a detailed understanding of their demographic characteristics. This involves analyzing the total number of individuals, how quickly the population is changing, the age and sex structure, and where they are located geographically. These data points are essential for researchers and policymakers to identify the specific needs of these communities and to plan effective developmental interventions.

293. (D) Their literacy rates and health outcomes.
To determine if development programs are successful, it is necessary to measure changes in key socio-economic indicators. Improvements in literacy levels and health metrics, such as life expectancy and reduced infant mortality, serve as evidence of progress. By tracking these specific outcomes, evaluators can assess whether the gap between marginalized groups and the general population is narrowing over time.

294. (B) Their effectiveness is mixed, with both progress and persistent challenges.
The impact of development plans for marginalized communities is often complex and varies across different sectors and regions. While there may be significant improvements in some areas, such as education or basic health, other challenges like economic mobility or social discrimination may persist. This mixed result indicates that while progress is being made, ongoing efforts and policy adjustments are still required.

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positions that offer little security or benefits. This distribution reflects a clear gender division, where the benefits of economic growth are not shared equally, and women often bear the burden of labor informalization.

279. (C) Women are migrating in increasing numbers for economic reasons, facing both empowerment and exploitation.
Migration is an increasingly important strategy for women seeking economic improvement in a globalized world. While moving for work can be an empowering experience that increases their independence and financial resources, it also presents significant risks. Migrant women may face various forms of exploitation and harsh working conditions, illustrating the contradictory nature of migration as both a challenge and an opportunity.

280. (D) Complex, with both beneficial and detrimental aspects.
Describing a process as having a "dual-edged nature" indicates that it possesses both positive and negative consequences. In the context of global economic integration, this means that while some aspects may promote growth and new possibilities, others can lead to increased inequality and hardship. This perspective requires a balanced evaluation that recognizes the diverse and often conflicting outcomes of such large-scale changes.

281. (A) Because women are typically responsible for domestic and caregiving tasks.
Socially assigned roles often dictate that women spend more time within the home performing essential household tasks. Because of this responsibility for domestic chores, caregiving, and resource management, women are more directly impacted by the quality of their living environment. Poor housing, lack of sanitation, or inadequate utilities increase their daily labor burden and significantly elevate their exposure to various health hazards.

282. (B) They are traditionally responsible for collecting water and fuelwood.
In many rural communities, the task of gathering natural resources like fuel and water falls primarily on women. When environmental changes like deforestation or falling water tables occur, these resources become scarcer. As a result, women must expend more effort and time traveling to distant locations to secure basic needs, making them more vulnerable to the direct physical and economic consequences of ecological decline.

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283. (B) A reduction in opportunities for education and income generation.
When women are forced to spend a significant portion of their day securing water and fuel, they have less time available for other pursuits. This increased labor burden directly conflicts with their ability to attend school or engage in paid work. Consequently, environmental degradation can trap women in a cycle of poverty by limiting their opportunities for personal development and financial independence.

284. (A) The consistent and multi-level nature of the differential environmental impact on genders.
Connecting the immediate household environment with broader ecological trends demonstrates how gender inequality operates across different scales. Whether at the micro level of domestic sanitation or the macro level of climate change, women consistently face disproportionate burdens. This multi-level perspective highlights that the differential impact of environmental issues is not an isolated event but a systemic problem rooted in gendered roles.

285. (C) Environmental degradation exacerbates existing gender inequalities.
The degradation of the natural environment does not affect everyone equally; instead, it tends to worsen existing social disparities. Because women often have specific resource-dependent roles and less access to assets, they are more severely impacted by environmental changes. This process reinforces traditional gender roles and increases the vulnerability of women, making environmental sustainability a crucial component of the fight for equality.

286. (D) To ensure policies and programmes do not perpetuate gender inequality.
Gender mainstreaming is a comprehensive strategy used to ensure that all stages of policy development consider the different needs of men and women. By integrating a gender perspective into the design and evaluation of programs, the goal is to prevent the reinforcement of existing

31. Consider the following statements regarding key committees and their focus areas related to India's health services:
1. The Bhore Committee (1946) laid out a comprehensive plan for health services.
2. The Mudaliar Committee (1962) assessed performance since the Bhore report.
3. The Chadha Committee (1963) focused on malaria eradication maintenance.
4. The Mukherjee Committee (1965) delinked malaria from family planning.
5. The Jungalwalla Committee (1967) recommended integration of health services.

(A) 1, 2, and 3 only
(B) 2, 4, and 5 only
(C) 1, 3, and 4 only
(D) 1, 2, 3, 4, and 5

32. Which Indian state was a pioneer in formulating its own state-level population policy before the National Population Policy of 2000?
(A) Kerala
(B) Tamil Nadu
(C) West Bengal
(D) Punjab

33. The primary purpose of the Medical Termination of Pregnancy (MTP) Act is to:
(A) Promote abortion as a primary method of family planning.
(B) Legalize and regulate abortion to ensure it is performed by qualified professionals under safe conditions.
(C) Prohibit abortions under all circumstances to increase the population.
(D) Allow sex-selective abortions based on family preference.

34. These questions consist of two statements — Assertion (A) and Reason (R).
Assertion (A): The Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act was enacted in India.
Reason (R): The Act aims to prevent the misuse of diagnostic techniques for the purpose of sex-selective abortions and to curb the declining child sex ratio.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

35. The COTPA Act, 2003, is a key legislation in India related to:
(A) Control of Trans-fats in food.
(B) Child and Orphan Trafficking Prevention.
(C) Control of Tobacco Products.
(D) Consumer and Trader Protection.

36. Which of the following is NOT a component of Ante Natal Care (ANC) under the RMNCH+A programme?
(A) Tetanus toxoid immunization.
(B) Iron and Folic Acid supplementation.
(C) At least four antenatal check-ups.
(D) Finalizing the child's name for birth registration.

37. Match List I (Health Intervention) with List II (Target Condition/Group) and select the correct answer using the codes given below:
List I:
P. Immunization,
Q. IFA supplementation,
R. ORS,
S. Post Natal Care.
List II:
1. Anemia prevention,
2. Childhood diarrhoea,
3. Vaccine-preventable diseases,
4. Mother and newborn after delivery.

(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-1, R-2, S-4
(C) P-2, Q-3, R-4, S-1
(D) P-3, Q-4, R-1, S-2

38. The term 'Natal Care' in the context of maternal health programmes refers to:
(A) Care provided to the mother and baby during the first six weeks after birth.
(B) Care provided during childbirth, including labor and delivery.
(C) Care provided to the pregnant woman before the onset of labor.
(D) Nutritional counseling provided to adolescent girls.

39. Acute Respiratory Infection (ARI) in children is primarily addressed in public health programs through:

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295. (C) Reduce the socio-economic disparities between them and the general population.
The primary aim of targeted interventions for SC and ST communities is to achieve social and economic parity with the rest of the nation. By improving access to education, health, and employment, these programs seek to eliminate the historical gaps that have separated these groups. Ultimately, the goal is to ensure that all citizens have equal opportunities to succeed and contribute.

296. (D) The accurate determination of their size, growth, and distribution.
One of the most significant hurdles in addressing the needs of the disabled population is the lack of precise demographic data. Collecting accurate information on the number of individuals with disabilities, their geographical spread, and how the group is changing over time is complicated by varying definitions and data collection methods. This difficulty makes it challenging for governments to plan effective services.

297. (A) For effective policy and programme planning.
Organizing the disabled population into categories based on specific impairments is a vital step for effective governance. Different disabilities require different support, such as mobility aids or specialized educational tools. A systematic classification allows policymakers to design targeted programs that address the unique requirements of each group, ensuring resources are used efficiently.

298. (B) Promote their welfare, rehabilitation, and empowerment.
Initiatives for persons with disabilities are designed to provide a comprehensive support system that goes beyond simple aid. These programs focus on improving overall well-being through health services, helping individuals develop skills through rehabilitation, and increasing their agency through socio-economic empowerment. This multi-faceted approach aims to ensure that people with disabilities can lead fulfilling lives and exercise their fundamental rights.

299. (B) Ensuring a barrier-free environment.
A major goal of disability-focused development plans is to remove physical and social obstacles that prevent full participation in community life. Creating a barrier-free environment involves making public spaces, transportation, and workplaces accessible. By eliminating these hurdles, society can ensure individuals with disabilities have the same opportunities for education, employment, and social interaction as others.

300. (A) To foster independence and full participation in society.
The ultimate objective of comprehensive support programs for the physically challenged is to enable them to live autonomous lives as integrated members of society. Rather than providing temporary assistance, these initiatives provide tools and environments necessary for individuals to contribute to their communities. This focus on independence is essential for protecting the dignity and rights of all citizens.

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vulnerability for both boys and girls as their bodies undergo rapid growth and development. While other risks like pregnancy or certain lifestyle-related diseases may be more gender-specific, the need for adequate nutrition is a universal requirement for the healthy physical and cognitive development of all teenagers.

271. (C) The exclusion of unpaid domestic and care work from formal economic measurements.
Standard economic measurements often fail to account for a significant portion of the labor performed by women. Much of their work involves essential but unpaid domestic chores and caregiving responsibilities within the household. Because these activities do not take place in the formal market, they are frequently omitted from national statistics, leading to a substantial underestimation of women's true economic contributions.

272. (B) Restricted land ownership and biased inheritance laws.
Women's economic progress is frequently hindered by legal and social systems that limit their access to essential assets. Biased inheritance laws often favor male heirs, preventing women from owning land or property. This lack of collateral further restricts their ability to secure credit and invest in businesses, creating a cycle of economic dependence and limiting their potential for entrepreneurial success and growth.

273. (D) Precarious conditions, low pay, and a lack of social security.
The informal economy is often characterized by a lack of regulation and stability, which impacts the workers within it. Those employed in this sector typically face low wages, insecure job status, and hazardous working conditions. Furthermore, they are generally excluded from social safety nets, such as maternity benefits or retirement pensions, making them particularly vulnerable to economic shocks and health crises over time.

274. (A) The disproportionate representation of women among the poor due to economic disparities.
This term highlights the unequal distribution of poverty, where women and households headed by females are more likely to experience economic hardship. This disparity results from various factors, including limited access to resources, the undervaluation of labor, and structural barriers in the labor market. Consequently, poverty is not gender-neutral but is deeply influenced by the social and economic disadvantages faced by women.

275. (C) They exist even when men and women perform work of equal value.
Disparities in earnings between men and women remain a persistent issue within the labor market. These wage gaps often exist even when both genders perform tasks that require similar levels of skill, effort, and responsibility. This suggests that factors beyond individual productivity, such as systemic biases and the historical undervaluation of traditionally female-dominated roles, continue to influence how wages are determined.

276. (A) It creates both new economic opportunities and new forms of marginalization.
The integration of global economies has complex results for women worldwide. On one hand, it can provide new employment opportunities in expanding sectors like technology and manufacturing. On the other hand, the competitive nature of global markets often leads to the casualization of labor and poor working conditions. Thus, globalization simultaneously offers a path toward economic participation while creating new forms of vulnerability.

277. (D) An acknowledgment of women's agency and negotiation of power.
To fully understand how global economic shifts affect gender, it is necessary to look beyond structural constraints and view women as active participants. Women often use their economic roles to negotiate power within their families and communities, demonstrating significant agency. A comprehensive analysis must therefore account for how individuals navigate these changing landscapes and exert influence, rather than treating them solely as passive subjects.

278. (B) Through the disproportionate employment of women in low-wage, insecure jobs.
In urban settings, the impact of global economic pressures often manifests as a segmented labor market. Women are frequently concentrated in the informal sector or in low-paying, precarious

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to improve service delivery and overall efficiency.
(B) To focus solely on the prevention and eradication of major communicable diseases in India.
(C) To establish a nationwide health system based entirely on traditional systems of medicine.
(D) To achieve universal health coverage and deliver quality health care services to all at affordable costs.

8. The National Policy on Older Persons was specifically designed to address which of the following?
(A) The financial, health care, and social well-being of senior citizens.
(B) The mandatory retirement age for government employees.
(C) The voting rights and political participation of the elderly.
(D) The establishment of luxury retirement communities.

9. Consider the following statements regarding social security for the elderly in India as implied by policy frameworks:
1. It primarily focuses on financial assistance through pension schemes.
2. It includes provisions for healthcare and subsidized medical treatment.
3. It encourages family members to take care of their elderly relatives.
4. It is exclusively managed by non-governmental organizations.
(A) 1 and 4 only
(B) 2 and 3 only
(C) 1, 2 and 3 only
(D) 1, 2, 3 and 4

10. The term 'Healthy Ageing', as promoted by the WHO Framework, is best defined as:
(A) The process of developing and maintaining the functional ability that enables well-being in older age.
(B) The theoretical process of extending the human lifespan indefinitely through biological intervention.
(C) The absolute absence of any chronic disease or physical impairment in individuals over 60 years.
(D) The state of remaining employed and economically productive after reaching the age of retirement.

11. Read the following statements and select the correct option.
Statement I: The National Youth Policy aims to empower the youth of the country to achieve their full potential.
Statement II: A key strategy of the policy is to focus on skill development and entrepreneurship.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

12. Arrange the following in chronological order and select the correct sequence using the codes given below:
1. National Population Policy (Second)
2. National Health Policy (First)
3. National Health Policy (Third)
4. National Policy on Older Persons
(A) 2, 4, 1, 3
(B) 1, 2, 4, 3
(C) 2, 1, 4, 3
(D) 4, 2, 1, 3

13. A state government launches a program providing free antiretroviral therapy (ART) and running awareness campaigns to reduce stigma. This action directly aligns with the strategies of which national policy?
(A) National Health Policy, 2017
(B) National Youth Policy
(C) National Policy on HIV/AIDS
(D) National Nutrition Policy

14. Which of the following statements about the National Environment Policy is likely to be incorrect in the context of public health?
(A) It aims to integrate environmental concerns into all sectoral development activities.
(B) It recognizes the direct link between environmental quality and human health outcomes.
(C) It proposes strategies for managing and conserving natural resources for future generations.
(D) It prioritizes industrial growth over environmental protection and public health.

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15. Consider the following statements regarding the WHO Framework for Healthy Ageing:
1. Creating age-friendly environments.
2. Aligning health systems to the needs of older populations.
3. Developing systems for long-term care.
4. Promoting research and innovation in geriatric care.
5. Focusing solely on curative treatments for diseases of old age.

(A) 1, 2, and 5 only
(B) 2, 3, 4 and 5
(C) 1, 2, 3, and 4 only
(D) 1 and 5 only

16. Which committee, known as the Health Survey and Development Committee, laid the foundation for a three-tier health system in India?
(A) Mudaliar Committee
(B) Bhore Committee
(C) Kartar Singh Committee
(D) Shrivastav Committee

17. The concept of 'Social Gradients of health for Ageing Population' refers to:
(A) The geographical distribution of elderly populations across various states and union territories.
(B) The fact that health outcomes for the elderly are systematically linked to their socioeconomic status.
(C) The architectural design of ramps and slopes required in government-run old age homes.
(D) The increasing prevalence of social media use among senior citizens in metropolitan areas.

18. Match List I (Committee) with List II (Key Recommendation/Focus) and select the correct answer using the codes given below:
List I:
P. Bhore Committee,
Q. Mudaliar Committee,
R. Kartar Singh Committee,
S. Shrivastav Committee.
List II:
1. Multipurpose Health Workers (MPW),
2. Post-Bhore consolidation,
3. PHC concept blueprint,
4. Health Assistants cadre.

(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-2, R-1, S-4
(C) P-2, Q-3, R-4, S-1
(D) P-3, Q-1, R-2, S-4

19. What is the primary role of NITI Aayog in relation to health and population policies in India?
(A) Direct implementation of health programs at the district level.
(B) To function as the sole funding agency for all national health schemes.
(C) To act as a policy think tank, providing strategic and technical advice to governments.
(D) To regulate the private healthcare sector and set pricing for medical procedures.

20. Geriatric care in India, as a specialized field, primarily focuses on:
(A) The health and care of children and adolescents.
(B) The reproductive health of women.
(C) The management of communicable diseases across all age groups.
(D) The unique health needs and well-being of elderly people.

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21. These questions consist of two statements — Assertion (A) and Reason (R).
Assertion (A): The recommendations of the Kartar Singh Committee led to a significant change in the health workforce at the grassroots level.
Reason (R): The committee recommended the integration of various vertical programs and the creation of Multipurpose Health Workers (MPW) to deliver a package of services.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

22. Which of the following represents an incorrect pair of a committee and its focus?
(A) Bhore Committee - Laying the blueprint for Primary Health Centres.
(B) Mudaliar Committee - Reviewing progress

since the Bhore committee report.
(C) Chadha Committee - National Malaria Eradication Programme maintenance phase.
(D) Mukherjee Committee - Exclusively focusing on urban health services.

23. The evolution of the Family Welfare Programme in India since 1952 has seen a shift from:
(A) A focus on rural areas to an exclusive focus on urban areas.
(B) A clinical approach to a reproductive and child health approach.
(C) A voluntary program to a strictly coercive program.
(D) A government-led program to a completely private-sector-led program.

24. Consider the following statements about the recommendations of various health committees in India:
1. The Bhore Committee recommended a long-term plan to achieve a ratio of one doctor per 2000 population.
2. The Mudaliar Committee recommended the strengthening of district hospitals.
3. The Chadha Committee suggested that Basic Health Workers should handle malaria vigilance duties.
4. The Jungalwalla Committee focused on the integration of health services.
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

25. The Shrivastav Committee's recommendations were instrumental in shaping which aspect of India's health system?
(A) The promotion of indigenous systems of medicine.
(B) The privatization of Primary Health Centres.
(C) The establishment of a new cadre of health assistants and reform of medical education.
(D) The framework for the National Mental Health Programme.

26. Which of the following is NOT a population control strategy typically adopted under India's Five Year Plans?
(A) Withholding basic civic amenities for large families.
(B) Promoting spacing methods.
(C) Increasing the age at marriage.
(D) Providing incentives for small family norms.

27. The National Health Mission (NHM) was launched by combining which two existing missions?
(A) National AIDS Control Programme and National Leprosy Eradication Programme.
(B) Reproductive and Child Health Programme and Universal Immunization Programme.
(C) National Tobacco Control Programme and National Mental Health Programme.
(D) National Rural Health Mission and National Urban Health Mission.

28. Which committee recommended that a single male and female Multipurpose Health Worker (MPW) should be responsible for a population of approximately 5000?
(A) Bhore Committee
(B) Kartar Singh Committee
(C) Mudaliar Committee
(D) Bajaj Committee

29. The 'RMNCH+A' strategy under the National Health Mission stands for:
(A) Rural, Maternal, Neonatal, Child and Hospital care.
(B) Regional, Medical, Nutritional, Child and Health-worker access.
(C) Reproductive, Maternal, Newborn, Child Health and Adolescent.
(D) Restorative, Maternal, Neonatal, Child and Ambulance services.

30. Which of the following actions demonstrates the role of a state government in adapting national health policies?
(A) Directly appealing to the World Health Organization for funds, bypassing the central government.
(B) Refusing to implement any centrally sponsored health schemes.
(C) Formulating international health agreements with neighboring countries.
(D) Creating a unique state-level health policy that addresses local disease burdens and demographic profiles.

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CHAPTER 09

Population & Health Policies and Programmes

1. Which National Population Policy was formulated in the post-emergency period, emphasizing the voluntary nature of the family planning program?
(A) National Population Policy, 2000
(B) National Population Policy, 1977
(C) National Health Policy, 1983
(D) National Health Policy, 2002

2. In the context of national policies, what does the term 'Thematic areas' primarily refer to?
(A) The specific focus areas or key pillars around which a policy is structured.
(B) The geographical regions where the policy is implemented.
(C) The chronological timeline for achieving policy goals.
(D) The funding agencies responsible for the policy's financial aspects.

3. Match List I (National Policy) with List II (Year of Announcement) and select the correct answer using the codes given below:
List I:
P. First National Health Policy,
Q. National Policy on Older Persons,
R. Second National Population Policy,
S. Most recent National Health Policy.
List II:
1. 2000,
2. 2017,
3. 1983,
4. 1999.
(A) P-3, Q-4, R-1, S-2
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-1, R-4, S-2
(D) P-4, Q-1, R-3, S-2

4. Which of the following is a correct statement regarding the National Health Policy of 1983?
(A) It was the first policy to introduce user fees for all government-provided public health services.
(B) It primarily focused on achieving a strict two-child norm across the country by the year 1990.
(C) It exclusively promoted private sector participation in urban healthcare settings to reduce costs.
(D) It was formulated in response to the global call for 'Health for All' from the Alma Ata Declaration.

5. All of the following were stated objectives of the National Population Policy, 2000, EXCEPT:
(A) Achieving a stable population by 2045.
(B) Addressing the unmet needs for contraception and health care infrastructure.
(C) Mandating coercive measures for family planning acceptance.
(D) Making school education up to age 14 free and compulsory.

6. These questions consist of two statements — Assertion (A) and Reason (R).
Assertion (A): The National Population Policy, 2000, aimed to achieve population stabilization.
Reason (R): The policy promoted a holistic approach by integrating family planning with maternal and child health, and addressing unmet needs.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

7. What is the most appropriate description of the primary goal of the National Health Policy, 2017?
(A) To privatize all public health institutions

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(A) Providing vitamin A supplements to all children.
(B) Annual mandatory chest X-rays for all infants.
(C) Promoting the use of modern cooking fuels exclusively.
(D) Early diagnosis by health workers and appropriate case management.

40. Which of the following is considered a traditional method of family planning?
(A) Periodic abstinence (Rhythm Method)
(B) Intrauterine Device (IUD)
(C) Oral Contraceptive Pills
(D) Female Sterilization

41. Consider the following statements regarding family planning methods:
1. Modern methods are generally more effective than traditional methods.
2. Condoms offer dual protection against pregnancy and STDs/HIV.
3. Female sterilization is a permanent method of contraception.
4. Traditional methods like withdrawal have a high failure rate.
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2, and 4 only
(D) 1, 2, 3, and 4

42. The social and psychological consequences of infertility can include all of the following EXCEPT:
(A) Increased social status and community respect.
(B) Social stigma and ostracism, particularly for women.
(C) Marital distress and instability.
(D) Feelings of guilt, depression, and anxiety.

43. Which of the following correctly pairs a family planning method with its primary mode of action?
(A) Oral Pills - Act as a barrier to prevent sperm from entering the uterus.
(B) Copper-T (IUD) - Prevents ovulation from occurring.
(C) Vasectomy - Prevents the release of sperm during ejaculation.
(D) Rhythm Method - Relies on avoiding intercourse during the fertile period.

44. What is one of the main advantages of modern contraceptive methods over traditional ones?
(A) They are completely free from any side effects.
(B) They have a significantly higher effectiveness rate when used correctly.
(C) They do not require any action or participation from the user.
(D) They are always reversible without any medical intervention.

45. Socio-psychological and health problems of menopausal women often include:
(A) Increased fertility and higher chances of conception.
(B) Improved skin elasticity and reduced hair loss.
(C) Hot flashes, mood swings, and increased risk of osteoporosis.
(D) A sudden increase in physical strength and stamina.

46. The 'effectiveness' of a family planning method is best measured by its:
(A) Cost and availability in the market.
(B) Ease of use and user preference.
(C) Popularity in media advertisements.
(D) Ability to prevent unintended pregnancies.

47. Arrange the following events related to the evolution of family welfare programmes in India in chronological order:
1. Introduction of a target-free approach.
2. Launch of the National Rural Health Mission (NRHM).
3. Renaming of the Family Planning Programme to Family Welfare Programme.
4. India becomes the first country to launch a national Family Planning Programme.
(A) 4, 3, 1, 2
(B) 1, 4, 3, 2
(C) 4, 1, 2, 3
(D) 3, 4, 1, 2

48. Which of the following constitutes an achievement of the RMNCH+A programme?
(A) The complete eradication of all communicable diseases.
(B) A significant reduction in maternal and

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infant mortality rates.
(C) The total privatization of child health services.
(D) Achieving a birth rate of zero across the country.

49. The National Programme for Health Care of the Elderly (NPHCE) aims to:
(A) Force compulsory retirement on all citizens above the age of 60.
(B) Provide dedicated and accessible healthcare services for the elderly.
(C) Build exclusive luxury hospitals for senior citizens.
(D) Focus only on the palliative care aspect for the terminally ill elderly.

50. In the context of public health programmes, which of the following is a non-communicable disease?
(A) Diabetes
(B) Tuberculosis
(C) HIV/AIDS
(D) Malaria

51. Consider the following items related to public health in India:
1. PCPNDT Act,
2. COTPA Act,
3. Post Natal Care,
4. Treatment of Infertility,
5. Family Planning Methods.

Which of the above are correct within existing national health frameworks?
(A) 1, 2, and 3 only
(B) 3, 4, and 5 only
(C) 1, 2, 3, 4, and 5
(D) 1, 2, and 5 only

52. An 'impact assessment' of a health policy primarily aims to:
(A) Calculate the total financial cost of implementing the policy.
(B) Count the number of people employed by the policy implementation agency.
(C) Document the political process that led to the policy's creation.
(D) Determine the effects and outcomes of the policy on the population's health and well-being.

53. At the organizational structure of India's rural health infrastructure, which is the most peripheral contact point between the community and the health system?
(A) Community Health Centre (CHC)
(B) Primary Health Centre (PHC)
(C) Sub Health Centre (SHC)
(D) District Hospital

54. These questions consist of two statements — Assertion (A) and Reason (R).
Assertion (A): The health system functioning in India is characterized by a multi-tiered organizational structure.
Reason (R): This structure, comprising Sub Centres, PHCs, and CHCs, is designed to provide a graded system of care from the village level upwards.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

55. A Primary Health Centre (PHC) is typically envisaged to serve a population of:
(A) 3,000-5,000 in plain areas.
(B) 80,000-1,20,000 in plain areas.
(C) 5,00,000 or more in a district.
(D) 20,000-30,000 in plain areas.

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56. Which of the following is an incorrect statement about the roles of health personnel in the Family Welfare Programme?
(A) An ASHA (Accredited Social Health Activist) is a government-salaried doctor.
(B) The Auxiliary Nurse Midwife (ANM) is a key frontline worker at the Sub Centre level.
(C) The Medical Officer at a PHC is responsible for both curative and preventive services.
(D) A specialist doctor is expected to be available at a Community Health Centre (CHC).

57. Match List I (Health Facility) with List II (Typical Population Norm Served in Plain Areas) and select the correct answer using the codes given below:
List I:
P. Sub Health Centre,
Q. Primary Health Centre,

R. Community Health Centre.
List II:
1. 30,000,
2. 1,20,000,
3. 5,000.
(A) P-1, Q-2, R-3
(B) P-3, Q-1, R-2
(C) P-2, Q-3, R-1
(D) P-3, Q-2, R-1

58. The concept of Universal Health Care (UHC) in India primarily implies:
(A) All citizens can access quality health services without suffering financial hardship.
(B) All healthcare services, including cosmetic surgery, are provided free of cost.
(C) Only government hospitals will be allowed to function.
(D) Every citizen must have private health insurance.

59. 'Decentralization strategies in health' refers to the process of:
(A) Centralizing all decision-making power within the national Ministry of Health.
(B) Outsourcing all health services to international private companies.
(C) Closing down rural health centers and focusing only on district hospitals.
(D) Transferring authority and responsibility for health service delivery to lower levels of government, like PRIs.

60. What is the envisioned role of Panchayati Raj Institutions (PRIs) in health?
(A) To conduct complex surgical procedures.
(B) To participate in the planning, implementation, and monitoring of local health programmes.
(C) To manufacture and supply essential medicines.
(D) To regulate medical education and license practitioners.

61. Consider the following health systems reforms in India:
1. Promoting public-private partnerships (PPP).
2. Implementing social health insurance schemes.
3. Strengthening the role of local self-government in health.
4. Increasing public spending on health.
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

62. A Public-Private Partnership (PPP) in the health sector could involve which of the following scenarios?
(A) A private hospital being entirely taken over and run by the government.
(B) A government doctor opening a private clinic after hospital hours.
(C) A citizen paying for treatment at a government hospital.
(D) The government contracting a private company to manage diagnostic services in a public hospital.

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63. The Integrated Child Development Services (ICDS) scheme contributes to reducing malnutrition by:
(A) Providing supplementary nutrition, health check-ups, and pre-school education to children and mothers.
(B) Offering cash transfers to families for purchasing luxury goods.
(C) Constructing high-end gymnasiums in every village.
(D) Focusing exclusively on adult literacy programs.

64. Inter-sectoral coordination for improving health outcomes involves collaboration between the health sector and which other sector?
(A) The ministry of defense for military strategy.
(B) The ministries responsible for water, sanitation, and education.
(C) The department of space for satellite launches.
(D) The film and entertainment industry.

65. In public health financing, the term 'equity' refers to:
(A) Ensuring that everyone contributes the same amount of money for healthcare.
(B) Fairness in financing and delivering healthcare, often based on need rather than ability to pay.
(C) Providing the same level of healthcare to

girl child.
(B) A pension scheme for elderly women.
(C) A conditional cash transfer scheme to promote institutional deliveries.
(D) A program for building toilets in rural households.

118. The treatment for infertility in government programmes often focuses on:
(A) Promoting adoption as the only viable option.
(B) Diagnosis and management of common and treatable causes of infertility at district levels.
(C) Providing expensive private IVF treatments to all couples.
(D) Offering psychological counseling exclusively, with no medical intervention.

119. An example of a 'negative externality' in health is:
(A) An individual getting vaccinated, which also protects others.
(B) A government building a new public hospital.
(C) A person paying for their own medical treatment.
(D) An individual smoking in a public place, exposing others to secondhand smoke.

120. The 1984 World Population Conference in Mexico City was significant because:
(A) It was held amidst a changed political climate, with renewed emphasis on family planning programs.
(B) It was the first-ever international conference on population issues.
(C) It reversed the Cairo consensus on reproductive rights and female empowerment.
(D) It declared the global eradication of polio achieved in all member nations.

121. Which of the following is an INCORRECT statement regarding the health system in India?
(A) The system is a mix of public and private sector providers.
(B) State governments are primarily responsible for organizing and delivering health services.
(C) The central government's role is limited to international health treaties only.
(D) The National Health Mission supports states in strengthening their health systems.

122. The 'Reproductive, Maternal, Newborn, Child Health and Adolescent (RMNCH+A)' approach is described as a 'continuum of care' because it:
(A) links health services across different life stages and levels of care.
(B) provides care only in a continuous 24-hour cycle.
(C) is a program that will continue indefinitely without any changes.
(D) focuses only on one aspect of health, continuously.

123. What is the primary objective of the method of economic evaluation that compares the costs of two interventions with their health outcomes measured in the same natural units?
(A) Cost-benefit analysis
(B) Cost-utility analysis
(C) Budget impact analysis
(D) Cost-effectiveness analysis

124. The role of the ICDS (Anganwadi) worker in coordinating with the health sector typically includes all of the following EXCEPT:
(A) Assisting the ANM in immunization days.
(B) Prescribing and dispensing allopathic medicines for major illnesses.
(C) Identifying and referring malnourished children to the health center.
(D) Distributing supplementary nutrition.

125. The success of the Universal Immunization Programme (UIP) in India is a major achievement in the area of:
(A) Adolescent Health
(B) Geriatric Care
(C) Child Health
(D) Mental Health

126. Which legislation aims to curb the advertisement of and prohibit smoking in public places?
(A) The PCPNDT Act
(B) The MTP Act
(C) The National Food Security Act
(D) The COTPA Act, 2003

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significant role in global population and health matters.
Reason (R): Specialized agencies of the UN, such as WHO, UNFPA, and UNICEF, are mandated to work on global health, family planning, and child welfare issues.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

75. Which international conference on population is famously associated with the 'paradigm shift' towards recognizing individual rights, especially women's reproductive and sexual health rights?
(A) Bucharest, 1974
(B) Mexico City, 1984
(C) Alma Ata, 1978
(D) Cairo, 1994

76. The Alma Ata Declaration of 1978 is renowned for launching the global call for:
(A) The eradication of smallpox.
(B) Health for All by the year 2000 through Primary Health Care.
(C) The universal adoption of a two-child norm.
(D) The establishment of the Sustainable Development Goals.

77. Match List I (Global Initiative/Conference) with List II (Key Theme/Outcome) and select the correct answer using the codes given below:
List I:
P. Bucharest (1974),
Q. Alma Ata (1978),
R. Cairo (1994),
S. SDGs (2016).
List II:
1. Primary Health Care/Health for All,
2. "Development is the best contraceptive",
3. 17 Goals framework,
4. Reproductive rights Focus.
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-1, R-4, S-3
(C) P-3, Q-4, R-1, S-2
(D) P-2, Q-3, R-4, S-1

78. Which of the following is NOT a core component of Primary Health Care as outlined in the Alma Ata Declaration?
(A) Health education
(B) Provision of essential drugs
(C) Maternal and child health care, including family planning
(D) Advanced tertiary care like organ transplantation

79. The Millennium Development Goals (MDGs), established in 2000, included specific targets related to:
(A) Reducing child mortality, improving maternal health, and combating HIV/AIDS, malaria.
(B) Promoting space exploration and deep-sea research.
(C) Regulating global financial markets and banking systems.
(D) Establishing a single world government.

80. Sustainable Development Goal (SDG) 3, which replaced the health-related MDGs, aims to:
(A) Focus exclusively on combating HIV/AIDS.
(B) Ensure healthy lives and promote well-being for all at all ages.
(C) Provide free health insurance to every person on the planet.
(D) Nationalize all private pharmaceutical companies.

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81. Consider the following statements about global health issues:
1. UNFPA is the UN agency focused on population and reproductive health.
2. WHO is the coordinating authority on international health work.
3. Bucharest was the first major intergovernmental conference on population.
4. Mexico City (1984) reaffirmed the Bucharest plan of action.
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

82. A key difference in the health systems of developed versus developing countries is often the:

everyone, regardless of need.
(D) Ensuring that all hospitals are equally profitable.

66. Arrange the following health infrastructure units in ascending order of the level of care and complexity of services they are designed to provide:
1. Community Health Centre (CHC)
2. Sub Health Centre (SHC)
3. District Hospital
4. Primary Health Centre (PHC)

(A) 2, 4, 1, 3
(B) 1, 2, 4, 3
(C) 2, 1, 4, 3
(D) 4, 2, 1, 3

67. Which of the following is the best example of a 'public good' in the context of health?
(A) A heart transplant surgery for a wealthy individual.
(B) A prescription for a specific brand-name medication.
(C) A disease surveillance and vector control program for malaria.
(D) A private room in a luxury hospital.

68. The phenomenon where the actions of one individual have a health impact (positive or negative) on others who did not choose to incur that impact is known as:
(A) A private good.
(B) An insurance premium.
(C) A user fee.
(D) An externality.

69. National Health Accounting is a system for:
(A) Counting the number of doctors and nurses in a country.
(B) Auditing the personal finances of hospital administrators.
(C) Systematically tracking the flow of funds in a country's health system.
(D) Ranking hospitals based on patient satisfaction scores.

70. The primary principle of social health insurance is:
(A) Individual savings, where each person saves money for their own future health expenses.
(B) Pooling of risks and resources, where many people contribute to a fund to pay for the healthcare costs of the few who fall sick.
(C) Charging high fees from sick people to cover costs.
(D) Relying solely on charitable donations to fund all healthcare.

71. Consider the following statements regarding financing in health:
1. Efficiency means achieving the best health outcomes with available resources.
2. An externality occurs when one's consumption affects another's well-being.
3. Public goods in health are typically non-rivalrous and non-excludable.
4. Investment in health is an investment in human capital.
5. National Health Accounts primarily measure the quality of care provided.

(A) 1, 2, and 5 only
(B) 3, 4, and 5 only
(C) 1, 2, 3, and 4 only
(D) 1, 3, and 4 only

72. The concept of 'global health' is distinct from 'international health' because it:
(A) Emphasizes health issues that transcend national boundaries and require global cooperation.
(B) Focuses only on the health problems of developed countries.
(C) Is concerned exclusively with the health of international travelers.
(D) Deals only with the trade of pharmaceutical products.

73. The 'epidemiological transition' refers to a long-term shift in:
(A) The primary location of healthcare delivery, from hospitals to homes.
(B) The demographic profile, from a young population to an aging population.
(C) The patterns of disease and causes of death, from communicable to non-communicable diseases.
(D) The financing of healthcare, from public to private.

74. These questions consist of two statements — Assertion (A) and Reason (R).
Assertion (A): The United Nations (UN) plays a

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new drug to doctors.

91. Consider the following statements about the structure of health services in India:
1. A Sub Centre is typically staffed by a Male and a Female Health Worker (ANM).
2. A PHC is the first point of contact between community and medical officer.
3. A CHC is designed to provide referral and specialist health care.
4. District Hospitals are the apex institutions for health care within a district.
5. The organizational structure is uniform across all states, with no variation.

(A) 1, 2, and 3 only
(B) 1, 2, 3, and 4 only
(C) 2, 4, and 5 only
(D) All of the above

92. The term 'effectiveness' in the context of economic evaluation of health programmes refers to:
(A) The ratio of the programme's costs to its benefits, expressed in monetary terms.
(B) The ability of a programme to achieve its stated health goals or outcomes.
(C) The level of patient satisfaction with the programme.
(D) The total budget allocated to the programme.

93. What is the primary objective of the Janani Shishu Suraksha Karyakram (JSSK), a key scheme under the NHM?
(A) To provide career counseling to adolescent girls.
(B) To provide old-age pensions to all women.
(C) To eliminate out-of-pocket expenditure for pregnant women and sick infants for services in public health facilities.
(D) To ensure all children are enrolled in primary school.

94. The shift from a 'clinical' to a 'community-based' approach in family planning signifies a change towards:
(A) Performing all sterilizations only in large urban hospitals.
(B) Focusing only on the medical aspects of contraception.
(C) Abandoning all clinical methods of family planning.
(D) Delivering services and information closer to people's homes and involving the community.

95. Which of the following represents a correct pair of a population conference and its main slogan or theme?
(A) Alma Ata (1978) - "Health for All"
(B) Bucharest (1974) - "Reproductive Rights are Human Rights"
(C) Cairo (1994) - "Development is the best contraceptive"
(D) Mexico (1984) - "Universal Health Coverage"

96. Which of the following is a key strategy under the National Policy on HIV/AIDS?
(A) Mandatory detention of all HIV-positive individuals.
(B) Promoting voluntary counseling and testing, and preventing new infections.
(C) Limiting access to antiretroviral therapy to save costs.
(D) Discouraging public discussion about HIV to avoid panic.

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97. Read the following statements and select the correct option.
Statement I: Health Policies in developed countries often grapple with rising costs of technology-intensive care.
Statement II: Health Policies in developing countries prioritize tackling communicable diseases and basic infrastructure.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

98. The concept of 'investment in health' is based on the idea that:
(A) A healthy population is more productive and contributes to economic development.
(B) Money spent on health is purely consumption with no future returns.
(C) Health spending should be minimized to maximize economic growth.
(D) Only the wealthy should invest in their health.

99. The 'demographic transition' theory describes the shift from:

(A) Higher per capita expenditure on health and more robust infrastructure in developed countries.
(B) Complete absence of traditional medicine in developed countries.
(C) Total reliance on public funding in developing countries and private funding in developed countries.
(D) Prevalence of only non-communicable diseases in developed countries.

83. The Population Council is an international, non-profit, non-governmental organization that primarily:
(A) Provides emergency food aid during famines.
(B) Regulates international travel and tourism.
(C) Conducts biomedical, social science, and public health research.
(D) Acts as a military alliance for member nations.

84. What was a major point of contention at the 1974 Bucharest World Population Conference?
(A) The question of whether to establish the World Health Organization.
(B) The ethics of using computers in demographic research.
(C) The decision to eradicate smallpox globally.
(D) The debate between direct family planning programs versus socioeconomic development as fertility solutions.

85. The transition from Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs) represents a shift towards:
(A) A narrower focus, concerned only with extreme poverty.
(B) Goals that apply only to developing countries, not developed ones.
(C) A more comprehensive, universal, and integrated approach to development.
(D) A complete abandonment of health as a development priority.

86. The Bajaj Committee, an "Expert Committee for Health Manpower Planning, Production and Management," focused on:
(A) Formulating a new drug policy for the country.
(B) Reforming medical education and addressing the mismatch between health needs and personnel.
(C) Setting up super-specialty hospitals in metropolitan cities.
(D) Integrating traditional and allopathic systems of medicine.

87. Which Indian legislation provides for the maintenance and welfare of parents and senior citizens, making it a legal obligation for children or relatives?
(A) The National Policy on Older Persons, 1999
(B) The Persons with Disabilities Act, 1995
(C) The Juvenile Justice Act, 2015
(D) The Maintenance and Welfare of Parents and Senior Citizens Act, 2007

88. These questions consist of two statements — Assertion (A) and Reason (R).
Assertion (A): Policies and programmes related to reproductive health are a critical component of India's public health strategy.
Reason (R): High rates of maternal mortality and morbidity have historically been a major public health challenge in the country.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

89. In the context of the RCH programme, what does 'Vitamin A deficiency' primarily cause in young children?
(A) Scurvy
(B) Rickets
(C) Night blindness and increased susceptibility to infections.
(D) Anemia

90. Which of the following is an example of 'inter-sectoral coordination' for health improvement?
(A) The health department working with the public works department to ensure safe drinking water supply.
(B) A surgeon and an anesthetist working together during an operation.
(C) A PHC doctor referring a patient to a district hospital.
(D) A pharmaceutical company marketing a

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(B) High failure rate due to irregularity of menstrual cycles and difficulty in correct use.
(C) Requirement for surgical intervention.
(D) Severe hormonal side effects.

109. Consider the following statements about India's health infrastructure:
1. The Sub Health Centre is the first tier in the rural health system.
2. The Primary Health Centre is headed by a Medical Officer.
3. The Community Health Centre serves as a referral unit for four PHCs.
4. The organizational structure is rigidly fixed and identical in every district of India.

(A) 1 and 4 only
(B) 2 and 3 only
(C) 1, 2 and 3 only
(D) 1, 2, 3 and 4

110. The principle of 'efficiency' in public financing for health means:
(A) Spending the maximum amount of money possible on health.
(B) Ensuring that everyone receives exactly the same treatment.
(C) Funding only the most expensive and advanced medical technologies.
(D) Achieving the maximum possible health benefit from the resources used.

111. Which international agency is primarily focused on population issues, family planning, and reproductive health?
(A) United Nations Population Fund (UNFPA)
(B) World Health Organization (WHO)
(C) The World Bank
(D) UNESCO

112. Which of the following correctly pairs a global health goal framework with its timeline?
(A) Millennium Development Goals (MDGs) - 2016 to 2030
(B) Alma Ata Declaration (Health for All) - Target year 2000
(C) Sustainable Development Goals (SDGs) - 2000 to 2015
(D) Cairo Programme of Action - Target year 1990

113. The National Health Policy, 2017, mentions increasing public health expenditure to what percentage of the GDP in a time-bound manner?
(A) 1.0%
(B) 2.5%
(C) 5.0%
(D) 10.0%

114. Which one of the following committees first recommended the creation of a cadre of "social physicians"?
(A) Bhore Committee
(B) Mudaliar Committee
(C) Kartar Singh Committee
(D) Shrivastav Committee

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115. Which statement best describes the evolution of India's population policy?
(A) A consistent focus on coercive methods since 1952.
(B) A gradual decrease in government funding for family welfare.
(C) A shift from a narrow family planning focus to a broader reproductive health and rights-based approach.
(D) A complete transfer of responsibility from the central government to state governments.

116. Consider the following statements regarding health programmes in India:
1. National Tobacco Control Programme,
2. NPCDCS,
3. National Mental Health Programme,
4. National AIDS Control Programme,
5. National Vector Borne Disease Control Programme.

Which of the above are correct regarding the categorization of diseases?
(A) 1 and 2 address non-communicable; 4 and 5 address communicable.
(B) 1 and 3 address communicable; 2 and 4 address non-communicable.
(C) 4 is communicable; 1, 2, 3, 5 are non-communicable.
(D) 1, 2, 3 address non-communicable; 4 and 5 address communicable.

117. What is a key feature of the "Janani Suraksha Yojana" (JSY), a scheme under NHM?
(A) A scheme to provide free education to the

(A) Rural to urban population.
(B) An agrarian economy to an industrial economy.
(C) High birth and high death rates to low birth and low death rates.
(D) A young population structure to an old population structure.

100. Which of the following is a primary objective of the National Nutrition Policy?
(A) To increase food grain exports to other countries.
(B) To promote the consumption of fast food among adolescents.
(C) To regulate the prices of all food items in the open market.
(D) To reduce malnutrition and improve the nutritional status of the population.

101. The goal of the National Health Policy 2002 to eradicate polio by a specific year is an example of what component of a policy?
(A) Thematic Area
(B) Strategy
(C) A specific, time-bound Goal
(D) Purpose

102. Which committee is known for its report on the 'Integration of Health Services'?
(A) Chadha Committee
(B) Jungalwalla Committee
(C) Mukherjee Committee
(D) Kartar Singh Committee

103. Arrange the following in chronological order and select the correct sequence using the codes given below:
1. Kartar Singh Committee,
2. Mudaliar Committee,
3. Bhore Committee,
4. Shrivastav Committee.

(A) 3, 2, 1, 4
(B) 1, 3, 2, 4
(C) 3, 1, 2, 4
(D) 2, 3, 4, 1

104. The term 'disabilities' in population policies refers to which aspect of a special group?
(A) A condition of the body or mind that makes it more difficult for the person to do certain activities and interact with the world around them.
(B) A physical impairment present from birth that limits basic motor skills and daily mobility.
(C) A temporary medical illness like the common cold that briefly affects personal productivity.
(D) The inability to speak a foreign language or communicate effectively in diverse social settings.

105. A government initiative to provide counselling and support services for elderly individuals suffering from loneliness and depression is an intervention targeting:
(A) The general Quality of Life issues of the entire ageing population.
(B) The Social Gradient of health for the ageing population in urban areas.
(C) The specific Mental Health problems of the ageing population.
(D) The physical disabilities and mobility issues of the ageing population.

106. These questions consist of two statements — Assertion (A) and Reason (R).
Assertion (A): The National Health Mission (NHM) places a strong emphasis on the RMNCH+A continuum of care.
Reason (R): This approach ensures that care is provided at each stage of life to break the cycle of mortality and morbidity.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

107. Post Natal Care (PNC) is crucial for monitoring the health of:
(A) The pregnant woman in her last trimester.
(B) The adolescent girl before marriage.
(C) The menopausal woman.
(D) The mother and newborn in the weeks following delivery.

108. One of the major disadvantages of traditional family planning methods like the rhythm method is:
(A) High cost and unavailability.

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127. Read the following statements and select the correct option.
Statement I: The Bhore Committee (1946) provided a post-independence blueprint for India's health system.
Statement II: A key recommendation was the establishment of Primary Health Centres (PHCs) for every 40,000 population.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

128. Which of the following is the most accurate representation of a public good in health?
(A) A doctor's consultation.
(B) Information from a public health campaign about hygiene.
(C) A dose of insulin.
(D) A hospital bed.

129. The concept of 'social health insurance' in India is exemplified by schemes like:
(A) The Pradhan Mantri Jan Dhan Yojana (for financial inclusion).
(B) The Rashtriya Swasthya Bima Yojana (RSBY) and Ayushman Bharat (PM-JAY).
(C) The National Pension System (NPS).
(D) The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).

130. Which of the following falls under the category of 'Communicable Diseases' that public health programmes in India target?
(A) Tuberculosis
(B) Hypertension
(C) Cancer
(D) Osteoporosis

131. Match List I (Term/Concept) with List II (Description) and select the correct answer using the codes given below:
List I:
P. Equity,
Q. Efficiency,
R. Effectiveness,
S. Externality.
List II:
1. Achieving outcomes,
2. Impact on others,
3. Fairness based on need,
4. Optimizing resources.
(A) P-3, Q-4, R-1, S-2
(B) P-4, Q-3, R-2, S-1
(C) P-3, Q-1, R-4, S-2
(D) P-1, Q-2, R-3, S-4

132. A health system in a developing country is most likely to prioritize which of the following?
(A) Robotic surgery and personalized gene therapy.
(B) Luxury wellness retreats and cosmetic procedures.
(C) Medical tourism for wealthy foreigners.
(D) Management of infectious diseases and maternal and child health.

133. Which one of the following is NOT a goal under SDG 3 (Good Health and Well-being)?
(A) End the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases.
(B) Achieve universal health coverage.
(C) Ensure universal access to primary and secondary education.
(D) Reduce global maternal mortality.

134. The primary goal of the National Programme for Health Care of the Elderly (NPHCE) is to:
(A) Assist senior citizens in obtaining a complete university degree.
(B) Provide dedicated, affordable, and quality long-term care for the elderly.
(C) Mandate that all elderly people live in government-run old age homes.
(D) Provide free international travel and luxury tours for senior citizens.

135. Which of the following represents an INCORRECT pairing of a health policy and its primary focus?
(A) National Population Policy, 2000 - Population stabilization and reproductive health.
(B) National Health Policy, 2017 - Universal health coverage and health systems strengthening.
(C) National Policy on HIV/AIDS - Prevention of new infections and care for the infected.
(D) National Nutrition Policy - Exclusively focused on increasing grain exports.

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corporations to reduce national debt.

209. Consider the following statements regarding family planning methods:
1. Traditional include rhythm/withdrawal.
2. Modern include pills/IUDs/sterilization.
3. Modern have lower effectiveness.
4. Barrier methods prevent STIs.
5. Permanent are easily reversible.

(A) 1, 2, and 3 only
(B) 1, 2, and 4 only
(C) 3, 4, and 5 only
(D) All of the above

210. The organizational structure of the public health delivery system in a state is primarily the responsibility of the:
(A) State Department of Health and Family Welfare.
(B) Central Ministry of Health.
(C) NITI Aayog.
(D) Panchayati Raj Institutions.

211. What is the primary rationale for 'inter-sectoral coordination' for improving hygiene, water, and sanitation?
(A) To ensure that the health sector receives all the available development funds.
(B) To fulfill a mandatory bureaucratic requirement for international health awards.
(C) These factors are major determinants of health but fall under other government departments.
(D) To compensate for the lack of political will within the healthcare sector itself.

212. Which of the following is the BEST example of a positive externality in health?
(A) A factory polluting a local river and affecting community health.
(B) An individual buying a private health insurance policy for their family.
(C) A patient paying for a purely elective cosmetic medical procedure.
(D) A community-wide vaccination program reducing disease transmission for everyone.

213. The Sustainable Development Goals (SDGs) are different from the Millennium Development Goals (MDGs) in that they are:
(A) Focused exclusively on the health challenges of African nations.
(B) Legally binding treaties that carry international judicial penalties.
(C) Universal, applying to all countries, both developed and developing.
(D) Primarily concerned with the economic growth of large industrial nations.

214. Which one of the following is NOT a component of Primary Health Care as defined by the Alma Ata Declaration?
(A) Health education.
(B) Access to highly specialized surgical facilities.
(C) Food supply and proper nutrition.
(D) Adequate supply of safe water and basic sanitation.

215. Which statement best describes the role of NITI Aayog in health policy?
(A) It has the constitutional power to dictate health policy to all states.
(B) It is responsible for the primary village-level implementation of health schemes.
(C) It manages the recruitment and transfer of all public sector doctors.
(D) It functions as a think tank and advisory body, promoting cooperative federalism.

216. The 'Quality of Life' for an ageing population is a multi-dimensional concept that includes:
(A) Physical health, mental well-being, social relationships, and environment.
(B) Physical health outcomes and biological longevity factors only.
(C) Financial status and the total amount of personal assets accumulated.
(D) The total number of children and grandchildren in the family unit.

217. Match List I (Concept) with List II (Example/ Implication) and select the correct answer:
List I:
P. Global Health,
Q. Epidemiological Transition,
R. Decentralization,
S. Social Health Insurance.
List II:
1. Management by Panchayats,
2. Ayushman Bharat,

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145. Which of the following is a key advantage of a condom as a family planning method?
(A) It acts as a permanent surgical method of contraception.
(B) It provides protection against both pregnancy and Sexually Transmitted Infections (STIs).
(C) It is the most effective clinical method of long-term family planning.
(D) It requires no action or participation from the user at the time of use.

146. Consider the following statements related to the recommendations of various committees:
1. Bhore Committee conceptualized the PHC.
2. Mudaliar Committee focused on consolidation.
3. Kartar Singh Committee proposed MPWs.
4. Shrivastav Committee emphasized referral complexes.
5. Chadha Committee dealt with National Filaria Control.
(A) 1, 2, 3, and 4 only
(B) 2, 3, 4, and 5 only
(C) 1, 2, and 3 only
(D) 1, 3, 4, and 5 only

147. The concept of 'Health Systems Reforms' in India typically includes:
(A) Strategies aimed at weakening the public sector to promote private competition.
(B) The large-scale building of hospital infrastructure without changing governance.
(C) Introducing changes in governance, financing, and delivery to improve performance.
(D) Reducing the number of medical colleges to improve the quality of new graduates.

148. In the Indian health system, a Community Health Centre (CHC) is intended to act as a:
(A) First point of contact for village communities with a medical doctor.
(B) Super-specialty medical center providing advanced neurological surgeries.
(C) Training center for ASHA workers to learn basic administrative skills.
(D) First-level referral unit for a cluster of Primary Health Centres.

149. The World Population Conference held in Cairo in 1994 is considered a landmark event because it:
(A) Reaffirmed the strict demographic targets and quotas for all developing nations.
(B) Was the first time a global conference on population was ever conducted.
(C) Firmly placed women's health, empowerment, and reproductive rights at the center.
(D) Established the original Millennium Development Goals for the year 2015.

150. Which of the following is NOT a modern method of family planning?
(A) Oral pills
(B) Withdrawal (Coitus interruptus)
(C) IUDs
(D) Injectables

151. The 'social and psychological consequences of infertility' are often more severe for women in many societies due to:
(A) Inherent biological factors that make women more emotionally sensitive to health issues.
(B) The higher financial cost of medical treatments required specifically for women.
(C) The general lack of male support for reproductive health issues in rural areas.
(D) Societal pressures and the high value placed on women's role as mothers.

152. The 'Global Demographic Transition' describes a worldwide trend of:
(A) Population stabilization and the gradual ageing of the global population.
(B) Rapidly increasing fertility and mortality rates in developed nations.
(C) Rapid population growth in every country regardless of development level.
(D) A return to pre-industrial patterns of high birth and high death rates.

153. Which of the following is a direct goal of policies related to 'Age at Marriage'?
(A) To increase the total fertility rate in urban populations.
(B) To promote early marriages to ensure larger family sizes.
(C) To ensure better health outcomes for the mother and child, and provide opportunities

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189. Which of the following is NOT a recognized health problem often associated with menopausal women?
(A) Osteoporosis
(B) Hot flashes
(C) Increased fertility
(D) Mood swings

190. The principle of 'effectiveness' of health care delivery refers to:
(A) The total financial cost incurred per unit of service delivered.
(B) The fairness of the distribution of services across the population.
(C) The speed with which a patient is admitted to a public hospital.
(D) The degree to which desired health outcomes are achieved.

191. Which of the following is an example of an achievement of the RMNCH+A programme?
(A) A significant reduction in the national Infant Mortality Rate (IMR).
(B) A steady and continuous increase in the national Total Fertility Rate.
(C) A decline in the number of institutional deliveries in rural areas.
(D) A decrease in the percentage of the population using modern contraceptive methods.

192. Read the following statements and select the correct option.
Statement I: The Bhore Committee recommended Primary Health Units.
Statement II: The Mudaliar Committee recommended strengthening district hospitals as referral centers.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

193. What is the primary role of an ASHA (Accredited Social Health Activist) in the health system?
(A) To perform minor surgeries and diagnostic tests at the village level.
(B) To act as a health activist and facilitator between community and health system.
(C) To manage the entire national budget for the National Health Mission.
(D) To prescribe and dispense specialized drugs for chronic medical conditions.

194. The shift in disease patterns from predominantly communicable diseases to predominantly non-communicable diseases is known as:
(A) Epidemiological Transition
(B) Demographic Transition
(C) Nutritional Transition
(D) Health System Transition

195. What does the 'A' in RMNCH+A signify?
(A) Ambulance
(B) Antenatal
(C) Adolescent health
(D) Anemia

196. Which of the following represents a key strategy of the National Population Policy, 2000?
(A) Implementing strict disincentives for families with more than two children.
(B) Mandating sterilization for all individuals after they have had two children.
(C) Promoting the use of traditional family planning methods exclusively.
(D) Promoting a target-free approach focused on meeting unmet needs for contraception.

197. 'Social gradients of health' for the ageing population imply that:
(A) All elderly individuals experience the same health status regardless of wealth.
(B) Health status is determined solely by local geography and regional climate.
(C) Elderly people from lower socioeconomic strata tend to have poorer health outcomes.
(D) Elderly individuals living in cities are always healthier than those in rural areas.

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198. The Alma Ata Declaration identified Primary Health Care (PHC) as the key to achieving 'Health for All'. Which of the following is a core principle of PHC?
(A) High-cost technological intervention.
(B) Community participation and appropriate technology.
(C) Focus exclusively on the urban elite.
(D) A purely curative medical focus.

199. Which of the following actions is prohibited under the COTPA Act, 2003?

of the public health response to which childhood illness?
(A) Diarrhoea
(B) ARI
(C) Measles
(D) Tetanus

163. Which statement is incorrect regarding the ICDS scheme's role in health?
(A) It provides supplementary nutrition to children and nursing mothers.
(B) It facilitates basic health check-ups and immunization coordination.
(C) It provides formal primary school education from Class 1 to 5.
(D) It offers non-formal pre-school education to children under six.

164. 'Economic evaluation of health programmes' is a tool used to:
(A) Calculate the exact number of people visiting a hospital in a year.
(B) Ensure that public health programs are profitable for the government.
(C) Provide a mechanism for economists to run all public hospitals.
(D) Assist in decision-making by comparing the costs and consequences of different interventions.

165. Which of the following represents a health system characteristic of a developed country compared to a developing one?
(A) A higher burden of infectious and parasitic diseases in the general population.
(B) A significantly lower number of physicians per thousand population.
(C) A well-established system of social security and health insurance.
(D) A primary focus on basic sanitation and clean water access.

166. Arrange the following in chronological order and select the correct sequence:
1. Cairo Conference on Population and Development,
2. Launch of the SDGs,
3. Alma-Ata Conference,
4. Launch of the MDGs.

(A) 3, 1, 4, 2
(B) 1, 3, 4, 2
(C) 3, 4, 1, 2
(D) 4, 3, 1, 2

167. A key goal of the National Youth Policy is to:
(A) Restrict the movement of youth across state borders for employment.
(B) Promote the mandatory age of marriage at 16 for all citizens.
(C) Guarantee government jobs for all individuals between the ages of 18 and 25.
(D) Channelize the energy of the youth for nation-building and personal development.

168. The National Health Policy of 2002 was formulated in the backdrop of:
(A) The economic liberalization of the early 1990s and the commitments of the NPP 2000.
(B) The immediate political aftermath of India's independence in 1947.
(C) The global oil crisis and the subsequent recession of the 1970s.
(D) The launch of the Sustainable Development Goals by the United Nations.

169. Consider the following statements regarding population and health policies:
1. NPP 2000 aims for population stability by 2045.
2. NHP 2017 aims to increase public health spending to 2.5% of GDP.
3. National Policy on Older Persons was launched in 1999.
4. National Environment Policy is disconnected from public health.

(A) 1 and 2 only
(B) 1, 2 and 3 only
(C) 3 and 4 only
(D) 1, 2, 3 and 4

170. The term 'organizational structure' of the health system in India refers to:
(A) The hierarchy of health facilities from the village level to the national level.
(B) The specific architectural design and layout of public hospital buildings.
(C) The standardized salary structure for all medical professionals in India.
(D) The network of private companies that supply medical equipment to hospitals.

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136. These questions consist of two statements — Assertion (A) and Reason (R).
Assertion (A): Inter-sectoral coordination is crucial for improving public health outcomes.
Reason (R): Health is determined not just by healthcare services, but also by factors like sanitation, nutrition, education, and environment.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

137. What is the most significant disadvantage of a permanent family planning method like sterilization?
(A) It has a very low effectiveness rate.
(B) It has to be performed every month.
(C) It is generally not reversible, making it unsuitable for those who may want children later.
(D) It offers no protection against sexually transmitted diseases.

138. The role of Panchayati Raj Institutions (PRIs) in the health sector was institutionalized and strengthened under which major national programme?
(A) The National Rural Health Mission (2005)
(B) The National Family Planning Programme (1952)
(C) The National Cancer Control Programme (1975)
(D) The Universal Immunization Programme (1985)

139. Consider the following aspects of policies for special groups:
1. Barrier-free access for people with disabilities.
2. Mental health support for the ageing population.
3. Financial security for the elderly through pensions.
4. Promotion of quality of life for senior citizens.

Which of the above are correct regarding policies concerning Ageing and Disabilities?
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2 and 3 only
(D) 1, 2, 3 and 4

140. The principle 'Health for all by 2000' emphasized:
(A) The scientific eradication of all known human diseases by the turn of the century.
(B) The attainment of a level of health that would permit all people to lead a socially and economically productive life.
(C) The establishment of a modern multispecialty public hospital in every village.
(D) The mandatory requirement for every citizen to possess private health insurance.

141. A government program providing free iron and folic acid tablets to pregnant women is a direct intervention to combat:
(A) Vitamin D deficiency
(B) Diarrhoea
(C) Anemia
(D) Acute respiratory infections

142. In the context of health service delivery, 'Universal Health Care' is primarily a goal related to:
(A) Profitability
(B) Technological
(C) Administrative
(D) Equity and access

143. The Mudaliar Committee (1962) was also known as the:
(A) Health Survey and Planning Committee
(B) Health Survey and Development Committee
(C) Committee on Multipurpose Workers
(D) Committee on Medical Education

144. What is the main purpose of the 'A' (Adolescent) component added to RMNCH in the 'RMNCH+A' strategy?
(A) To facilitate the construction of new regional vocational and fine art colleges.
(B) To address the health needs of adolescents, including nutrition, sexual health, and mental health.
(C) To provide dedicated ambulance services specifically for pediatric emergencies.
(D) To train adolescents as vocational helpers for senior citizens in the community.

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minister for the country.
(C) Manage only the administrative paperwork for all district hospitals.
(D) Provide comprehensive primary curative, preventive, and promotive health care.

181. These questions consist of two statements — Assertion (A) and Reason (R).
Assertion (A): Decentralization strategies aim to empower Panchayati Raj Institutions (PRIs) in health.
Reason (R): Involving local governments can lead to more responsive and accountable health service delivery.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

182. What is the primary rationale for 'Social Health Insurance' schemes in a country like India?
(A) To generate a significant profit for private insurance companies.
(B) To reduce high out-of-pocket expenditure and protect families from catastrophic costs.
(C) To ensure that people who fall sick more often pay higher premiums.
(D) To completely replace all public healthcare services with private providers.

183. The concept of 'Global Health' emerged from the recognition that:
(A) Health issues are unique to individual nations and require isolated solutions.
(B) Health problems are only relevant to wealthy nations with advanced technology.
(C) International travel is the sole cause of all modern disease outbreaks.
(D) Health issues like pandemics and climate change require global cooperation.

184. Which UN agency is the primary authority on international health work, including setting norms and standards?
(A) WHO
(B) UNFPA
(C) UNICEF
(D) UNDP

185. The health policies of a developed country are more likely to focus on which of the following challenges compared to a developing country?
(A) Basic sanitation and clean water access for the rural population.
(B) Eradication of malaria and other major tropical infectious diseases.
(C) Managing chronic diseases and the costs of an aging population.
(D) Achieving universal immunization for polio and measles.

186. The 'Jungalwalla Committee' is most noted for its recommendations on:
(A) The integration of medical care, public health, and family planning services.
(B) The creation of a new cadre of multipurpose health workers.
(C) The development of a long-term blueprint for Primary Health Centres.
(D) The reform of medical education and the creation of health assistants.

187. Which of the following best describes the purpose of the National Policy on HIV/AIDS?
(A) To isolate and quarantine all individuals who test positive for HIV.
(B) To treat HIV as a non-serious condition that requires no state funding.
(C) To ban international travel for individuals coming from high-prevalence areas.
(D) To provide a comprehensive framework for prevention, care, support, and treatment.

188. Match List I (Programme Component) with List II (Target Beneficiary/Issue) and select the correct answer:
List I:
P. Adolescent Health,
Q. JSSK,
R. NPHCE,
S. PCPNDT.
List II:
1. Elderly,
2. Pregnant Women & Newborns,
3. Sex-selective abortion prevention,
4. Youth 10-19.
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-2, R-1, S-3
(C) P-4, Q-3, R-1, S-2
(D) P-2, Q-4, R-3, S-1

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for female education.
(D) To reduce the total number of marriages performed in a calendar year.

154. Which committee's recommendations led to the delinking of the family planning program from malaria control activities and proposed a separate staff for family planning?
(A) Mukherjee Committee
(B) Chadha Committee
(C) Jungalwalla Committee
(D) Kartar Singh Committee

155. These questions consist of two statements — Assertion (A) and Reason (R).
Assertion (A): The National Health Policy, 2017 advocates for a larger role for the private sector in healthcare.
Reason (R): It encourages "strategic purchasing" from the private sector and promoting public-private partnerships.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

156. 'Geriatric care in India' faces challenges that include all of the following EXCEPT:
(A) A severe shortage of trained healthcare professionals in specialized geriatric care.
(B) A significant and steady decrease in the number of elderly people in the population.
(C) The rising burden of non-communicable diseases among senior citizens.
(D) The breakdown of traditional joint family support systems in urban areas.

157. Match List I (Legislation/Act) with List II (Primary Objective) and select the correct answer using the codes given below:
List I:
P. MTP Act,
Q. PCPNDT Act,
R. COTPA Act,
S. Maintenance and Welfare Act.
List II:
1. Prohibition of sex selection,
2. Regulation of termination of pregnancy,
3. Obligation for children to support parents,
4. Tobacco control.
(A) P-1, Q-2, R-3, S-4
(B) P-2, Q-1, R-4, S-3
(C) P-2, Q-4, R-1, S-3
(D) P-4, Q-1, R-2, S-3

158. A key achievement of the family welfare programme in India has been:
(A) The complete eradication of male child preference in all Indian communities.
(B) The achievement of a stable population as targeted by the NPP 2000.
(C) The attainment of the lowest population density in South Asia.
(D) A significant increase in contraceptive prevalence rate and a reduction in the total fertility rate.

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159. The term 'public sector spending on health' refers to:
(A) The expenditure on health by government bodies at the central, state, and local levels.
(B) The individual private spending by citizens on non-prescribed health products.
(C) The total revenue generated by private hospitals from medical tourism.
(D) The foreign aid received from international agencies for specific health projects.

160. The United Nations Millennium Development Goals (MDGs) consisted of how many goals to be achieved by 2015?
(A) 5
(B) 8
(C) 12
(D) 17

161. Which of the following is a key element of the WHO Framework for Healthy Ageing?
(A) The mandatory retirement of all citizens once they reach the age of 50.
(B) Aligning health systems to the unique needs of older persons.
(C) Segregating elderly populations into dedicated remote residential zones.
(D) Focusing health resources exclusively on treating infectious diseases.

162. The strategy of providing Oral Rehydration Solution (ORS) and Zinc tablets is a cornerstone

(A) Designating specific smoking areas in airports.
(B) The legal cultivation of tobacco for agricultural purposes.
(C) The export of tobacco products to international markets.
(D) The sale of tobacco products to minors.

200. The concept of a 'Sub Health Center' (SHC) in the Indian health system was a direct outcome of the recommendations made by which committee?
(A) Bhore Committee
(B) Mudaliar Committee
(C) Shrivastav Committee
(D) Bajaj Committee

201. Consider the following statements regarding the National Health Mission (NHM):
1. Launched in 2005 as NRHM.
2. Two sub-missions: NRHM and NUHM.
3. ASHA workers are key mission components.
4. Aims to centralize all planning.
(A) 1 and 4 only
(B) 2 and 3 only
(C) 1, 2 and 3 only
(D) 1, 2, 3 and 4

202. A public-private partnership (PPP) where the government pays a private entity to build and operate a new wing of a district hospital is an example of:
(A) Health systems reform.
(B) Decentralization.
(C) Inter-sectoral coordination.
(D) Communicable disease control.

203. In National Health Accounting, 'out-of-pocket' spending refers to:
(A) Expenditure on health programs directly funded by government bodies.
(B) Financial contributions received from international donors for health projects.
(C) Funds allocated by private corporations for corporate social responsibility in health.
(D) Money paid directly by individuals for health services, not covered by insurance.

204. Which of the following best captures the essence of the Programme of Action from the 1994 Cairo Conference?
(A) A focus on rigid demographic targets and population growth quotas.
(B) An emphasis on empowering women and ensuring their reproductive health and rights.
(C) The promotion of a mandatory one-child policy for all developing nations.
(D) A global strategy to privatize all maternal and child health services.

205. These questions consist of two statements — Assertion (A) and Reason (R).
Assertion (A): Health systems in many developing countries face a 'dual burden' of disease.
Reason (R): They have to simultaneously deal with persistent communicable diseases and a rising incidence of non-communicable diseases.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

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206. Which is NOT a thematic area of the National Health Policy 2017?
(A) Strengthening health systems.
(B) Promoting private sector participation.
(C) Promotion of AYUSH.
(D) Providing universal free housing for all citizens.

207. Which committee recommended the creation of a cadre of paraprofessional and semi-professional health workers from within the community, such as 'Health Assistants'?
(A) Shrivastav Committee
(B) Bhore Committee
(C) Mudaliar Committee
(D) Bajaj Committee

208. Which of the following represents a health system reform aimed at improving equity?
(A) Building a luxury hospital for international medical tourists.
(B) Launching a government-funded health insurance scheme for low-income families.
(C) Increasing user fees for all patients in public healthcare facilities.
(D) Selling public hospitals to private

171. The concept of 'private goods' in health is best illustrated by:
(A) Access to clean air through national environmental regulations.
(B) Large-scale mosquito control programs funded by the state.
(C) A handwashing public service announcement on national television.
(D) A dose of medicine that, once consumed by one person, cannot be consumed by another.

172. Which global conference strongly echoed the sentiment "development is the best contraceptive"?
(A) Mexico
(B) Bucharest (1974)
(C) Cairo
(D) Alma Ata

173. The 'Bajaj Committee' focused on a critical aspect of the health system. What was it?
(A) The long-term financing of major urban health infrastructure.
(B) The regulation of drug pricing in the pharmaceutical market.
(C) Health manpower planning and the reform of medical education.
(D) The role of NGOs in delivering village-level health services.

174. Which of the following is an example of a policy targeting a 'special group'?
(A) Highway infrastructure policy
(B) Trade policy
(C) Foreign policy
(D) The National Policy on Older Persons

175. Which of the following is NOT a strategy under the National Health Mission (NHM)?
(A) Centralizing all health financing and decision-making in the capital.
(B) Infrastructure development.
(C) Public-Private Partnerships.
(D) Decentralized planning.

176. Consider the following statements concerning Indian health legislation:
1. MTP Act legalizes abortion under conditions.
2. PCPNDT Act aims to prevent female foeticide.
3. COTPA Act regulates tobacco products.
4. Acts are exclusively enforced by central government.
5. MTP Act allows abortion at any stage for any reason.
(A) 1, 2, and 3 only
(B) 2, 3, and 4 only
(C) 1, 2, and 5 only
(D) All of the above

177. From a public health perspective, what is a major disadvantage of IUCDs (Intrauterine Contraceptive Devices)?
(A) They possess a higher clinical failure rate than traditional methods.
(B) They do not offer protection against Sexually Transmitted Infections (STIs).
(C) They are considered a permanent and irreversible method of contraception.
(D) They are the most expensive form of family planning available to the public.

178. The success of RMNCH+A programme components can be measured by indicators such as:
(A) Increase in full immunization coverage and reduction in unmet need for family planning.
(B) A steady and observable increase in the rates of MMR and IMR.
(C) A significant decrease in the total number of institutional deliveries.
(D) An increase in the prevalence of nutritional anemia among pregnant women.

179. 'Impact assessment' of a family planning program would most likely measure:
(A) The total number of posters printed during a health awareness campaign.
(B) The number of administrative meetings held at the state headquarters.
(C) Changes in the contraceptive prevalence rate and total fertility rate.
(D) The length of new roads constructed to improve rural hospital access.

180. A key role and responsibility of a Medical Officer at a PHC is to:
(A) Perform complex neurosurgeries and advanced organ transplants.
(B) Serve as the primary national health

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3. Rise of diabetes/heart disease,
4. Pandemics cooperation.

(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-3, R-1, S-2
(C) P-4, Q-1, R-3, S-2
(D) P-2, Q-4, R-1, S-3

218. The National Population Policy of 1977 was a response to:
(A) The backlash against coercive family planning measures during the Emergency.
(B) The immediate successes of the Green Revolution in North India.
(C) The global commitments made during the Alma Ata conference.
(D) The demographic findings of the 1971 National Census.

219. Which of the following is a key objective of the National Policy on Older Persons?
(A) To make residence in government-run old age homes mandatory for all senior citizens.
(B) To restrict the property rights of elderly individuals to ensure state control.
(C) To disenfranchise elderly citizens from participating in national political elections.
(D) To encourage families to take care of their older members and strengthen intergenerational bonds.

220. The primary health concern addressed by the PCPNDT Act is:
(A) The overall rate of maternal mortality in the country.
(B) The declining child sex ratio due to sex-selective abortion.
(C) The spread of communicable diseases during the prenatal period.
(D) The high cost of prenatal diagnostic tests in private hospitals.

221. Consider the following strategies:
1. Cash incentives (JSY),
2. MPWs cadre,
3. Target-free approach,
4. PHC as key to Health for All,
5. Women's empowerment focus.

Which of the above are correct regarding key shifts in population and health programmes?
(A) 1, 2, and 3 only
(B) 2, 4, and 5 only
(C) 1, 3, 4 and 5 only
(D) 1, 2, 3, 4, and 5

222. Which tier of the health infrastructure is designed to provide specialist services like surgery, obstetrics & gynecology, pediatrics, and medicine?
(A) Sub Health Centre
(B) Primary Health Centre
(C) Anganwadi
(D) Community Health Centre (CHC)

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223. In the context of public financing in health, a key difference between public goods and private goods is that public goods are:
(A) Non-excludable and non-rivalrous in consumption.
(B) Significantly more expensive to produce than private medical goods.
(C) Provided only within large-scale public government hospitals.
(D) Exclusively produced by government-owned pharmaceutical companies.

224. The UN World Population Conference in Bucharest (1974) is often remembered for the debate between:
(A) The conflicting demographic ideologies of the USA and the USSR.
(B) Developed and developing countries on family planning versus development priorities.
(C) Pro-natalist and anti-natalist religious groups from across the world.
(D) The World Health Organization and the United Nations Population Fund.

225. A government program that teaches mothers how to prepare and use Oral Rehydration Solution (ORS) at home is an example of which component of Primary Health Care?
(A) Provision of essential drugs.
(B) Health education and promotion.
(C) Multi-sectoral coordination.
(D) First-level medical referral.

226. Which of the following is an incorrect statement about the Family Welfare Programme in India?
(A) It has consistently relied on coercive methods since its inception in 1952.
(B) It was the first official national family

(D) Decentralizing health administration

284. According to the text, why is inter-sectoral coordination with departments of hygiene, water, and sanitation crucial?
(A) It is fundamental to preventing many communicable diseases
(B) It helps in funding Public-Private Partnerships
(C) It is the sole responsibility of Panchayati Raj Institutions
(D) It is required for the functioning of the ICDS programme

285. The main theme discussed in the paragraph is:
(A) The hierarchical structure of the Indian health system
(B) The specific functions of a Primary Health Centre
(C) Strategies for health system reform like decentralization and collaboration
(D) The history of health policies in India since 1952

Direction : Please read the following source carefully.

The economic dimension of healthcare is critical, involving basic concepts of public financing that guide policy and investment. Key considerations include equity, efficiency, and effectiveness of health care delivery. Equity refers to the fair distribution of health services, efficiency to maximizing health outcomes for the resources used, and effectiveness to ensuring that interventions achieve their intended results. A fundamental concept in this domain is the distinction between public goods and private goods. Public goods, like disease surveillance, are non-excludable and non-rivalrous, often requiring public sector spending. Private goods, like a specific elective surgery, are excludable and can be provided by the market. Health investments can also create externalities—positive or negative effects on third parties—such as the community-wide benefit from an individual's vaccination. To track these financial flows, National Health Accounting provides a systematic framework. Furthermore, with rising healthcare costs, there is a growing need for Social Health Insurance schemes, which pool risk and resources to protect individuals from catastrophic health expenditure. The economic evaluation of population and health programmes, using specific principles and methods, is essential to assess their value for money and guide future investment in health.

Based on the above source, attempt the following five questions.

286. According to the passage, what is the primary purpose of Social Health Insurance schemes?
(A) To classify goods as public or private
(B) To fund the creation of positive externalities
(C) To conduct an economic evaluation of health programmes
(D) To pool risk and protect individuals from catastrophic health expenditure

287. The community-wide benefit from an individual's vaccination is provided as an example of:
(A) A private good
(B) An inefficiency in healthcare delivery
(C) An externality
(D) A principle of National Health Accounting

288. Which concept refers to maximizing health outcomes for the resources used?
(A) Equity
(B) Efficiency
(C) Effectiveness
(D) Externality

289. The source describes public goods in health, such as disease surveillance, as being:
(A) Excludable and best provided by the market
(B) A primary focus of Social Health Insurance
(C) A measure of the effectiveness of a programme
(D) Non-excludable and non-rivalrous

290. What is the function of National Health Accounting as mentioned in the text?
(A) To systematically track financial flows within the health sector
(B) To directly provide health services to the public
(C) To evaluate the principles and methods of programmes
(D) To distinguish between public and private goods

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(D) The overall reason for the policy's existence and the problem it seeks to address.

236. Which committee specifically looked into the problem of having separate, vertical programs for different diseases and recommended integration?
(A) Kartar Singh Committee
(B) Jungalwalla Committee
(C) Mukherjee Committee
(D) Shrivastav Committee

237. A key feature of population policies at the state level is that they can be:
(A) Directly contradictory to the primary goals of the national policy.
(B) Formulated without any financial considerations or budget constraints.
(C) Tailored to the specific demographic and social context of the state.
(D) Implemented only by central government officials without state input.

238. One of the most significant achievements of India's family welfare programme over the decades is the:
(A) Doubling of the national Total Fertility Rate since 1952.
(B) Total elimination of contraceptive use in rural populations.
(C) Achievement of immediate zero population growth in all states.
(D) Drastic reduction in the national Total Fertility Rate (TFR).

239. The 'Reproductive, Maternal, Newborn, Child Health and Adolescent (RMNCH+A)' programme represents what kind of approach?
(A) An integrated, life-cycle approach to health.
(B) A fragmented and disease-specific approach.
(C) A purely curative and surgical medical focus.
(D) A program focused exclusively on elderly health.

240. Which of the following is a key advantage of modern, long-acting reversible contraceptives (LARCs) like IUDs?
(A) They offer the best protection against Sexually Transmitted Infections.
(B) They are 'fit and forget' methods with high effectiveness over several years.
(C) They are easily self-administered by the user without medical assistance.
(D) They are guaranteed to have no physiological side effects whatsoever.

241. Methods and approaches of impact assessment of a health programme would include all the following EXCEPT:
(A) Analyzing standardized health indicators.
(B) Calculating the number of media articles written about the programme.
(C) Surveys for assessing knowledge and behavior.
(D) Comparing outcomes with a defined control group.

242. The responsibility for family welfare programme implementation at the district level lies with:
(A) The District Collector and the Chief Medical and Health Officer.
(B) The senior analysts at the national NITI Aayog headquarters.
(C) The Prime Minister's Office through direct supervision.
(D) The regional directors of the World Health Organization.

243. Consider the following statements regarding the role of institutions in health:
1. PRIs monitor local health programmes.
2. ICDS/Health sector coordinate for malnutrition.
3. PPPs are a form of health systems reform.
4. NITI Aayog acts as a policy think tank.
(A) 1 and 2 only
(B) 3 and 4 only
(C) 1, 2, and 3 only
(D) 1, 2, 3, and 4

244. The need for National Health Accounting arises from the need to:
(A) Rank individual doctors based on their surgical success rates.
(B) Count the total number of patients entering a hospital each day.
(C) Produce a simplified annual report card for hospital staff.
(D) Understand how money for health is raised, pooled, and used.

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planning program in the world.
(C) It evolved from a focus on population control to a broader welfare approach.
(D) It is a centrally sponsored program implemented by the states.

227. The introduction of user fees at public hospitals is a health system reform that can have a negative impact on which principle?
(A) Efficiency
(B) Effectiveness
(C) Equity
(D) Profitability

228. Which of the following statements about health systems in developed countries is most accurate?
(A) They are entirely free from any structural or financial challenges.
(B) Their primary burden remains major tropical infectious diseases.
(C) They are exclusively state-funded with no role for private providers.
(D) They often have universal health coverage through various insurance mechanisms.

229. The 'causes of infertility' that are addressed in government programmes are typically:
(A) Linked to supernatural or psychological factors beyond medical science.
(B) Focused exclusively on female biological factors and reproductive health.
(C) Focused on common, diagnosable, and manageable medical conditions in both genders.
(D) Managed by providing unlimited access to private IVF clinics.

230. Which of the following falls outside the scope of the RMNCH+A programme?
(A) Antenatal care
(B) Management of geriatric health problems
(C) Immunization
(D) Family planning

231. The National Health Policy, 2017, recognizes the need for inter-sectoral action to address 'social determinants of health'. Which of the following is a social determinant?
(A) The specific genetic code of an individual.
(B) The chemical composition of a specific antibiotic.
(C) The brand of medical diagnostic equipment used.
(D) A person's level of education and income.

232. These questions consist of two statements — Assertion (A) and Reason (R).
Assertion (A): The Bhore Committee's report is considered a seminal document in the history of public health in India.
Reason (R): It laid down a comprehensive blueprint for the organization of health services and emphasized integrating preventive and curative services.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

233. The ICDS scheme's contribution to health is primarily achieved through:
(A) Direct cash transfers to families for health expenses.
(B) The construction of new Primary Health Centres.
(C) Coordination with health sector for immunization and check-ups at the Anganwadi.
(D) The manufacturing and distribution of essential pharmaceutical drugs.

234. The concept of 'Healthy Ageing' as per the WHO framework focuses on:
(A) Maintaining functional ability to ensure well-being in older age.
(B) Eradicating all known chronic diseases in the elderly.
(C) Keeping all senior citizens employed in the industrial workforce.
(D) Focusing on cosmetic and aesthetic improvements for the elderly.

235. In the context of health policies, what is the 'purpose' of a policy?
(A) A simple list of chronological activities performed by staff.
(B) The total financial budget allocated for a single fiscal year.
(C) The official name of the minister who announced the policy.

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252. According to the text, what is a primary goal of the National Health Policy of 2017?
(A) Achieving universal health coverage and affordable care
(B) Establishing a comprehensive primary healthcare network
(C) Exclusively focusing on population stabilization
(D) Implementing the National Policy on HIV/AIDS

253. The source suggests that policies like the National Youth Policy and the National Policy on Older Persons are examples of:
(A) Overarching frameworks for the entire population
(B) Policies exclusively focused on environmental health
(C) Specialized policies targeting specific demographic groups
(D) Frameworks that predate the National Health Policy of 1983

254. The text implies that the development of various national policies in India has been:
(A) Static and unchanging since 1977
(B) Focused solely on a single issue of population control
(C) Independent of each other with no interconnections
(D) A dynamic and responsive process to evolving challenges

255. What was the stated aim of the National Health Policy of 1983 as mentioned in the paragraph?
(A) To set comprehensive goals for population stabilization
(B) To deliver quality, affordable healthcare for all
(C) To establish a comprehensive primary healthcare network
(D) To create specialized policies for youth and the elderly

Direction : Please read the following source carefully.

The strategic direction of India's health and family welfare programmes has been significantly shaped by the recommendations of various expert committees. These committees were periodically constituted to review the existing health system and suggest reforms. The Bhore Committee is often cited as a foundational report that laid the blueprint for a national health service. Subsequently, the Mudaliar Committee reviewed the progress and made further recommendations. The Chadha Committee focused on the integration of malaria eradication efforts with family planning, proposing a multipurpose worker concept. This idea was further explored by the Mukherjee Committee and the Jungalwalla Committee, which deliberated on the integration of health services. A major shift was recommended by the Kartar Singh Committee, which advocated for the creation of a cadre of multipurpose health workers (MPWs) and health assistants, replacing the previous unipurpose workers. The Shrivastav Committee further refined the model for rural health services, emphasizing community participation and the establishment of a referral system. Later, the Bajaj Committee addressed issues related to health manpower planning and education. These recommendations collectively influenced the evolution of population control strategies and health service delivery under different Five Year Plans, leading to the current structure of health services.

Based on the above source, attempt the following five questions.

256. Which committee's recommendation specifically advocated for replacing unipurpose workers with a cadre of multipurpose health workers (MPWs)?
(A) The Bhore Committee
(B) The Kartar Singh Committee
(C) The Mudaliar Committee
(D) The Bajaj Committee

257. The integration of malaria eradication with family planning through a multipurpose worker concept was a key focus of which committee?
(A) The Shrivastav Committee
(B) The Jungalwalla Committee
(C) The Mukherjee Committee
(D) The Chadha Committee

258. According to the passage, the recommendations of the various expert committees primarily influenced:
(A) The evolution of health services and population strategies in Five Year Plans

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(B) Only the establishment of the Bhore Committee
(C) The specific policies related to geriatric care in India
(D) The financial models of public-private partnerships

259. Which committee is mentioned as having addressed the specific issue of health manpower planning and education?
(A) The Kartar Singh Committee
(B) The Shrivastav Committee
(C) The Bajaj Committee
(D) The Mudaliar Committee

260. The source implies that the primary function of committees like Bhore, Mudaliar, and Shrivastav was to:
(A) Review the health system and recommend reforms
(B) Implement population control strategies directly
(C) Focus exclusively on urban health infrastructure
(D) Manage the budget of the Five Year Plans

Direction : Please read the following source carefully.

The National Health Mission (NHM) represents a cornerstone of India's public health strategy, having evolved significantly since its inception. Its history reflects a consolidation of efforts to strengthen rural and urban health systems. The NHM encompasses various critical schemes, with the Reproductive, Maternal, Newborn, Child Health and Adolescent (RMNCH+A) programme being a pivotal component. This programme adopts a continuum of care approach, integrating services to address the health needs of its target populations at every stage. 'R' stands for Reproductive Health, focusing on aspects like family planning and managing RTIs/STDs. 'M' for Maternal Health covers ante-natal, natal, and post-natal care. 'N' signifies Newborn Health, which is crucial in the first days of life. 'C' for Child Health includes immunization, management of diarrhoea and acute respiratory infections, and addressing vitamin deficiencies. The 'A' for Adolescent Health is a strategic addition, recognizing the unique health challenges of this age group. The achievements of the RMNCH+A programme are evaluated based on improvements in various health indicators related to these components. The overarching NHM framework provides the platform for implementing and monitoring these interconnected health interventions, aiming for a holistic improvement in public health outcomes.

Based on the above source, attempt the following five questions.

261. What does the '+A' in the RMNCH+A programme strategically signify?
(A) The addition of services for adult health
(B) The focus on alternative and ayurvedic medicine
(C) The emphasis on achievements and accountability
(D) The inclusion of adolescent health as a key focus area

262. The RMNCH+A programme is described as adopting which of the following approaches?
(A) A fragmented service delivery model
(B) A continuum of care approach
(C) A focus solely on urban health
(D) A strategy limited to reproductive health

263. According to the text, which of the following falls under the 'Child Health' component of the RMNCH+A programme?
(A) Ante-natal and post-natal care
(B) Management of RTIs and STDs
(C) Immunization and management of diarrhoea
(D) Family planning services

264. The source suggests that the National Health Mission (NHM) serves as a:
(A) Programme that is separate from and competes with RMNCH+A
(B) Temporary initiative for rural areas only
(C) Committee that only provides recommendations for health policies
(D) Framework for implementing and monitoring interconnected health interventions

265. Based on the paragraph, the 'Maternal Health' component of RMNCH+A would most likely include which services?
(A) Care provided during pregnancy, childbirth, and the period after delivery

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(B) Management of acute respiratory infections in children
(C) Health services for menopausal women
(D) Immunization schedules for newborns

Direction : Please read the following source carefully.

India has enacted specific policies, programmes, and legislations to address critical public health and social issues. Legal frameworks have been established to regulate the minimum age at marriage, recognizing its impact on maternal and child health. The Medical Termination of Pregnancy (MTP) Act provides a legal framework for abortions, while the Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act was specifically created to combat sex-selective abortion and the resulting adverse sex ratio. This legislation prohibits the determination and disclosure of the sex of the foetus. In a different domain of public health, the Cigarettes and Other Tobacco Products Act, 2003 (COTPA Act-2003), was implemented as a comprehensive tobacco control law. Its strategies include prohibiting smoking in public places, banning advertising of tobacco products, and mandating pictorial warnings on packaging. These legislative instruments are part of a broader strategy that also includes specific programmes related to Reproductive and Child Health (RCH). These programmes work in concert with the laws to provide services and information that support the legislative goals, creating a two-pronged approach of legal regulation and programmatic support to tackle multifaceted health challenges.

Based on the above source, attempt the following five questions.

266. What is the primary purpose of the PCPNDT Act as described in the passage?
(A) To provide a legal framework for all medical terminations of pregnancy
(B) To prohibit sex-selective abortion by regulating diagnostic techniques
(C) To regulate the minimum age at marriage for women and men
(D) To control the use of tobacco products in public places

267. The COTPA Act of 2003 is described as a comprehensive law for:
(A) Reproductive and Child Health
(B) Tobacco control
(C) Regulating the age at marriage
(D) Preventing infertility

268. The passage suggests that India's approach to public health issues like sex selection and tobacco use involves:
(A) Using a combination of legislative action and programmatic support
(B) Relying solely on educational programmes
(C) Implementing only international guidelines without domestic laws
(D) Focusing exclusively on penalties and punitive measures

269. According to the source, which legislation provides the legal framework for abortion in India?
(A) The PCPNDT Act
(B) The COTPA Act-2003
(C) The Medical Termination of Pregnancy (MTP) Act
(D) Legislation regulating the age at marriage

270. The prohibition of smoking in public places and banning tobacco advertising are strategies associated with which legislative act?
(A) The PCPNDT Act
(B) The MTP Act
(C) The National Environment Policy
(D) The COTPA Act-2003

Direction : Please read the following source carefully.

Addressing the health needs of specific population groups across the life cycle is a key aspect of India's public health programmes. For adolescents, programmes focus on their unique health needs, which differ from those of children and adults. Child health initiatives are comprehensive, targeting major causes of mortality and morbidity through services like immunization, management of Vitamin Deficiency, Diarrhoea, and Acute Respiratory Infections. Maternal health is addressed through a continuum of care, encompassing Ante-Natal, Natal, and Post-Natal Care to ensure the well-being of both mother and baby. The domain of reproductive health also includes family planning services, which offer a choice between traditional and modern methods, each with distinct advantages, disadvantages, and

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effectiveness levels. Furthermore, programmes are designed to address specific health conditions such as Reproductive Tract Infections (RTIs) and Sexually Transmitted Diseases (STDs), including HIV/AIDS. Beyond reproduction, public health also grapples with the causes and consequences of infertility, providing treatment in government programmes and addressing its social and psychological impacts. Similarly, the socio-psychological and health problems of menopausal women are recognized as an important area for health intervention, completing the focus on health across different life stages.

Based on the above source, attempt the following five questions.

271. According to the passage, the management of Diarrhoea and Acute Respiratory Infections is a key component of which area of public health?
(A) Adolescent Health
(B) Menopausal Health
(C) Child Health
(D) Ante-Natal Care

272. The text describes the approach to maternal health as:
(A) A focus solely on the post-natal period
(B) A continuum of care including ante-natal, natal, and post-natal phases
(C) A service limited to family planning methods
(D) A programme disconnected from child health initiatives

273. The passage indicates that public health programmes in India address infertility by:
(A) Focusing only on its social and psychological consequences
(B) Promoting traditional methods as the only solution
(C) Ignoring the issue in favor of family planning
(D) Providing treatment options within government programmes

274. Which of the following is NOT mentioned as a specific area of focus within India's public health programmes?
(A) Treatment for sports-related injuries
(B) Health problems of menopausal women
(C) Management of Vitamin Deficiency in children
(D) Services for RTIs/STDs including HIV/AIDS

275. The discussion of family planning in the source highlights that:
(A) Only modern methods are promoted by government programmes
(B) Traditional methods are considered completely ineffective
(C) A choice is offered between traditional and modern methods with varying attributes
(D) Family planning is exclusively about limiting population growth

Direction : Please read the following source carefully.

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The architecture of India's health infrastructure and delivery system is hierarchical, designed to provide a tiered system of care from the village level upwards. At the grassroots, the Sub Health Centre (SHC) serves as the first point of contact between the community and the primary healthcare system. Moving up the hierarchy, the Primary Health Centre (PHC) covers a larger population and offers a broader range of curative and preventive services. A PHC typically acts as a referral unit for a number of Sub Health Centres. The next tier is the Community Health Centre (CHC), which serves as a 30-bedded hospital and provides specialist services, functioning as a referral centre for the PHCs under its jurisdiction. This three-tiered system at the rural level is managed and supported by a health system at the District, State, and Center levels, each with specific roles in governance, funding, and policy-making. The successful functioning of this structure depends on various categories of health personnel, each with defined roles and responsibilities within the Family Welfare Programme. The overarching goal, currently being pursued, is the implementation of Universal Health Care, which aims to ensure that all individuals and communities receive the health services they need without suffering financial hardship.

Based on the above source, attempt the following five questions.

276. In India's hierarchical health delivery system, which facility typically functions as a referral unit for several Sub Health Centres?

(A) The Primary Health Centre (PHC)
(B) The Community Health Centre (CHC)
(C) The State-level Health Directorate
(D) The District Hospital

277. According to the text, what is the role of the Community Health Centre (CHC)?
(A) To be the first point of contact for the community
(B) To manage health policy at the national level
(C) To exclusively focus on family welfare programme training
(D) To serve as a 30-bedded hospital providing specialist services

278. The passage describes the organizational structure of the rural health system in India. What is the correct ascending order of these facilities?
(A) PHC, SHC, CHC
(B) SHC, PHC, CHC
(C) SHC, CHC, PHC
(D) CHC, PHC, SHC

279. The concept of Universal Health Care, as mentioned in the source, aims to:
(A) Privatize all health services in the country
(B) Focus only on the rural three-tiered system
(C) Ensure everyone gets health services without financial hardship
(D) Limit health services to preventive care only

280. The source implies that the effectiveness of the entire health infrastructure depends significantly on:
(A) The number of CHCs in a district
(B) The exclusive focus on curative services
(C) The health system at the Center level alone
(D) The roles and responsibilities of various health personnel

Direction : Please read the following source carefully.

Recent health system reforms in India have emphasized decentralization and multi-sectoral collaboration to improve service delivery. A key strategy has been to enhance the role of Panchayati Raj Institutions (PRIs) in health, empowering local governments to manage and monitor health services within their communities. This decentralization aims to make the health system more responsive and accountable to local needs. Beyond governmental structures, there is a growing recognition of the potential of Public-Private Partnerships (PPPs) to supplement public sector efforts in delivering health and family welfare services. Such partnerships can leverage private sector efficiency and resources to expand access and quality of care. Furthermore, improving health outcomes is understood to require inter-sectoral coordination. A prominent example is the coordination of the Integrated Child Development Services (ICDS) with the health sector to reduce malnutrition. The ICDS, by providing supplementary nutrition, growth monitoring, and pre-school education, plays a vital role that is synergistic with health goals. Similarly, achieving better health requires collaboration with sectors responsible for hygiene, water, and sanitation, as improvements in these areas are fundamental to preventing a host of communicable diseases and improving overall public health.

Based on the above source, attempt the following five questions.

281. What is the stated purpose of enhancing the role of Panchayati Raj Institutions (PRIs) in health?
(A) To make the health system more responsive and accountable locally
(B) To centralize all health decisions at the state level
(C) To privatize rural health centres completely
(D) To focus exclusively on urban healthcare through private partnerships

282. The passage presents Public-Private Partnerships (PPPs) in health as a means to:
(A) Replace the public health system entirely
(B) Leverage private sector resources to supplement public efforts
(C) Limit the role of Panchayati Raj Institutions
(D) Focus only on the provision of family welfare services

283. The coordination between ICDS and the health sector is highlighted as an example of inter-sectoral action aimed at:
(A) Improving hygiene and water supply
(B) Reducing malnutrition
(C) Implementing Public-Private Partnerships

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245. The Millennium Development Goals (MDGs) had a specific goal (MDG 5) dedicated to:
(A) Environmental sustainability.
(B) Eradication of poverty and hunger.
(C) Improving maternal health.
(D) Achieving universal primary education.

246. The 'Jungalwalla Committee' (1967) on the Integration of Health Services recommended:
(A) A strict separation of preventive and curative health cadres.
(B) A common seniority for all cadres (central, state, specialist, and generalist).
(C) The expansion of separate vertical disease-specific programs.
(D) The creation of a brand new cadre of Multipurpose Health Workers.

247. Read the following statements and select the correct option.
Statement I: The National Health Policy, 2017 aims to achieve Universal Health Coverage.
Statement II: A key strategy is strengthening the public sector and strategically purchasing services from the private sector.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

248. Which of the following represents a health problem specifically targeted under the 'Adolescent Health' component of RMNCH+A?
(A) Nutritional anemia and mental health issues.
(B) Age-related cataracts.
(C) Geriatric dementia.
(D) Post-natal infections.

249. The concept of 'equity' in health care financing implies:
(A) Everyone should pay the same insurance premium regardless of income.
(B) Only those who are currently sick should contribute to health funds.
(C) Contributions should be based on ability to pay, while benefits are based on need.
(D) The government should not spend any tax revenue on health services.

250. The shift from MDGs to SDGs represents a move towards an agenda that is:
(A) More comprehensive, integrated, and universally applicable to all countries.
(B) Limited in scope to the eradication of extreme poverty in Asia.
(C) Exclusively focused on environmental and climatic changes only.
(D) A set of legally binding international laws with strict enforcement.

Direction : Please read the following source carefully.

The evolution of India's national policies concerning population and health reflects a dynamic response to demographic and public health challenges. The journey began with a focus on population control, which was formalized over time. The National Population Policy of 1977 was an early attempt, later refined and expanded by the National Population Policy of 2000, which set comprehensive goals for stabilization. Concurrently, the health sector saw its own policy evolution, starting with the National Health Policy of 1983, which aimed to establish a comprehensive primary healthcare network. This was followed by the National Health Policy of 2002 and, more recently, the National Health Policy of 2017, which seeks to achieve universal health coverage and deliver quality, affordable healthcare. Beyond these overarching frameworks, specialized policies were developed to address specific demographic and social groups. These include the National Policy on Older Persons and associated legislation for their protection, the National Youth Policy, the National Policy on HIV/AIDS, and the National Environment Policy, each with its unique purpose, thematic areas, goals, objectives, and strategies designed to tackle targeted issues within the broader public health and population landscape.
Based on the above source, attempt the following five questions.

251. Which policy is described as a refinement and expansion of an earlier attempt at formalizing population control?
(A) The National Health Policy of 1983
(B) The National Population Policy of 2000
(C) The National Policy on Older Persons
(D) The National Health Policy of 2017

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The landscape of population and health is increasingly defined by global issues and challenges, necessitating international cooperation. The concept of global health transcends national boundaries, addressing health issues that require collaborative action. A key feature of this global context is the ongoing demographic, health, and epidemiological transition, where patterns of disease shift from infectious to chronic non-communicable diseases, alongside changes in population age structures. International agencies play a pivotal role in navigating these challenges. The United Nations (UN) and its specialized agencies, such as the World Health Organization (WHO) and the United Nations Population Fund (UNFPA), along with non-governmental organizations like the Population Council, provide technical assistance, funding, and policy guidance. A series of UN World Population Conferences, notably in Bucharest (1974), Mexico (1984), and Cairo (1994), have been instrumental in shaping global consensus on population issues. A landmark event was the 1978 Alma-Ata Declaration, which championed the ambitious goal of "Health for all by 2000" and articulated the essential components of Primary Health Care as the strategy to achieve it. These global milestones have profoundly influenced the health policies and systems in both developed and developing countries.

Based on the above source, attempt the following five questions.

291. Which landmark declaration championed the goal of "Health for all by 2000" and outlined the components of Primary Health Care?
(A) The Bucharest Conference Declaration
(B) The Mexico Conference Declaration
(C) The Alma-Ata Declaration
(D) The Cairo Conference Declaration

292. The source describes the epidemiological transition as a shift from:
(A) Infectious diseases to chronic non-communicable diseases
(B) Chronic diseases to infectious diseases
(C) A young population to an older population
(D) National health concerns to local health concerns

293. Which of the following is mentioned as a specialized agency of the United Nations involved in population and health?
(A) The Population Council
(B) The World Trade Organization
(C) The Bucharest Conference Committee
(D) The United Nations Population Fund (UNFPA)

294. The UN World Population Conferences in Bucharest, Mexico, and Cairo were instrumental in:
(A) Eradicating non-communicable diseases
(B) Shaping global consensus on population issues
(C) Establishing the Population Council
(D) Focusing solely on the health systems of developed countries

295. The concept of global health, as presented in the text, implies that health issues:
(A) Are confined strictly within national borders
(B) Are primarily the concern of non-governmental organizations only
(C) Require collaborative action that transcends national boundaries
(D) Have remained unchanged since the Alma-Ata Declaration

Direction : Please read the following source carefully.

The global community has established successive frameworks to address pressing development challenges, with health as a central component. Following the vision of the Alma-Ata Declaration, the turn of the century saw the adoption of the Millennium Development Goals (MDGs) in 2000. The MDGs comprised a set of time-bound targets, several of which were directly related to health, such as reducing child mortality, improving maternal health, and combatting HIV/AIDS, malaria, and other diseases. As the MDG era concluded, the international community transitioned to a more comprehensive and universal agenda with the Sustainable Development Goals (SDGs), adopted in 2016. The SDGs broadened the scope, with SDG 3 specifically aiming to "Ensure healthy lives and promote well-being for all at all ages." This goal encompasses a wider range of health targets than the MDGs. In parallel, specialized frameworks address specific demographic shifts.

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23. (B) A clinical approach to a reproductive and child health approach.
Since its inception in 1952, India's family welfare program has evolved from a narrow clinical focus on sterilization and target-based population control to a broader reproductive and child health approach. This transformation emphasizes a life-cycle perspective, integrating maternal and child health services with family planning. The shift reflects a move toward voluntary participation, individual health rights, and the provision of a comprehensive range of health services for the entire family.

24. (D) 1, 2, 3, and 4
Various health committees in India have provided foundational recommendations that shaped the national healthcare landscape. The Bhore Committee proposed long-term doctor-to-population ratios, while the Mudaliar Committee emphasized strengthening district hospitals. The Chadha Committee defined the role of health workers in malaria vigilance, and the Jungalwalla Committee advocated for the integration of health services. Together, these reports formed the basis for organizing, managing, and delivering public health services across the country.

25. (C) The establishment of a new cadre of health assistants and reform of medical education.
The Shrivastav Committee, reporting in 1975, was instrumental in reforming medical education and proposing a decentralized health delivery system. It recommended the creation of a new cadre of semi-professional health assistants to bridge the gap between community health workers and medical officers. By emphasizing a referral complex and community involvement, the committee's findings significantly influenced the development of health manpower and the expansion of rural health services in India.

26. (A) Withholding basic civic amenities for large families.
India's population control strategies under various Five Year Plans have focused on voluntary and promotive measures rather than punitive actions. Common strategies include promoting spacing methods between children, increasing the legal age at marriage, and providing incentives for small family norms. Withholding basic civic amenities is not a recognized or adopted strategy, as national policies emphasize human rights and the voluntary nature of family planning programs to achieve demographic goals.

27. (D) National Rural Health Mission and National Urban Health Mission.
The National Health Mission represents a major programmatic shift in India's healthcare strategy by integrating two significant sub-missions. It combines the National Rural Health Mission, which focuses on the needs of the countryside, with the National Urban Health Mission, addressing the specific health challenges of city dwellers. This unified framework aims to strengthen health systems across both geographical areas, ensuring equitable access to quality healthcare for all citizens.

28. (B) Kartar Singh Committee
The Kartar Singh Committee, reporting in 1973, recommended a significant restructuring of the health workforce by introducing Multipurpose Health Workers. The committee proposed that one male and one female worker should serve a population of approximately 5,000, ensuring a manageable workload and effective service delivery at the grassroots level. This population norm became a standard for the Sub Health Centre level, facilitating the integration of various national health and family welfare programs.

29. (C) Reproductive, Maternal, Newborn, Child Health and Adolescent.
The RMNCH+A strategy is a comprehensive framework under the National Health Mission that addresses the health needs of individuals across different life stages. It stands for Reproductive, Maternal, Newborn, Child Health and Adolescent health. This continuum-of-care approach ensures that essential health interventions are linked from pregnancy through childhood and into adolescence. By focusing on these interrelated stages, the strategy aims to reduce mortality and improve overall health outcomes across generations.

30. (D) Creating a unique state-level health policy that addresses local disease burdens and demographic profiles.
State governments play a crucial role in adapting national health policies to suit their specific geographic and demographic contexts. By

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ANSWERS

1. (B) National Population Policy, 1977
The National Population Policy of 1977 was introduced following the period of emergency to shift the focus from coercive practices to a strictly voluntary family planning approach. It emphasized individual choice and welfare, renaming the program to the Family Welfare Programme. This policy aimed to integrate family planning with health and nutrition services, reflecting a transition toward democratic and rights-based demographic strategies in the country.

2. (A) The specific focus areas or key pillars around which a policy is structured.
Thematic areas represent the foundational pillars or specialized sectors that define the scope and structure of a national policy. These specific focus areas ensure that policy interventions are organized logically to address various dimensions of a complex issue, such as healthcare or population growth. By categorizing objectives into thematic domains, policymakers can streamline implementation strategies, allocate resources effectively, and monitor progress across diverse but interrelated goals.

3. (A) P-3, Q-4, R-1, S-2
Historical health and population policies in India are linked to specific years of announcement based on evolving national priorities. The first National Health Policy was introduced in 1983, while the National Policy on Older Persons followed in 1999. Subsequently, the second National Population Policy was launched in 2000. The most recent comprehensive update, the National Health Policy of 2017, focuses on achieving universal health coverage today.

4. (D) It was formulated in response to the global call for 'Health for All' from the Alma Ata Declaration.
The National Health Policy of 1983 was a landmark document formulated in direct alignment with the global Alma Ata Declaration's call for 'Health for All'. It emphasized the establishment of a comprehensive primary healthcare network to provide essential services across rural and urban areas. This policy aimed to integrate preventive and promotive health measures with curative services, laying the foundation for organized public health infrastructure.

5. (C) Mandating coercive measures for family planning acceptance.
The National Population Policy of 2000 established long-term objectives to achieve a stable population by the year 2045. It focused on addressing unmet needs for contraception, health infrastructure, and personnel while making school education free and compulsory up to age fourteen. Crucially, the policy moved away from coercive measures, emphasizing a voluntary and target-free approach to family welfare that prioritized individual reproductive rights and health.

6. (A) Both A and R are true and R is the correct explanation of A.
The National Population Policy of 2000 adopted a comprehensive strategy aimed at stabilizing the population through a holistic development approach. By integrating family planning services with maternal and child health interventions, the policy addressed the underlying factors of population growth. This method focused on fulfilling unmet needs for reproductive health services and ensuring informed choice for citizens, which serves as a logical foundation for achieving demographic stabilization.

7. (D) To achieve universal health coverage and deliver quality health care services to all at affordable costs.
The primary goal of the National Health Policy 2017 is to achieve the highest possible level of health and well-being for all through a preventive and promotive healthcare orientation. It specifically targets universal health coverage, ensuring that every citizen has access to quality medical services without facing financial hardship. This involves strengthening public health systems and leveraging diverse

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effectiveness of their interventions and make informed decisions about resource allocation and future policy directions.

53. (C) Sub Health Centre (SHC)
The Sub Health Centre is the most peripheral point of contact between the community and the public health system in rural India. Staffed by auxiliary nurse midwives and male health workers, it provides essential primary healthcare services, including maternal and child health, immunization, and family planning information. Serving a small population, the SHC acts as the first tier of the health infrastructure, facilitating the delivery of basic health interventions at the village level.

54. (A) Both A and R are true and R is the correct explanation of A.
India's health system is organized into a multi-tiered structure designed to provide a graded system of care from the grassroots level upward. This hierarchy, comprising Sub Centres, Primary Health Centres, and Community Health Centres, ensures that citizens receive medical attention appropriate to their needs close to their homes. This structured approach allows for efficient resource management and facilitates the referral of complex cases to higher-level facilities, strengthening the overall effectiveness of public health delivery.

55. (D) 20,000-30,000 in plain areas.
A Primary Health Centre is designed to serve as the first point of contact between the community and a medical officer. In plain areas, a PHC typically serves a population of 20,000 to 30,000, while in hilly or tribal regions, the norm is adjusted to 20,000. These centers provide integrated curative and preventive services and act as a referral unit for several Sub Centres, playing a critical role in the rural healthcare delivery system.

56. (A) An ASHA (Accredited Social Health Activist) is a government-salaried doctor.
The Accredited Social Health Activist is a community health volunteer, not a government-salaried doctor. ASHAs act as vital links between the community and the public health system, facilitating access to services like immunization and institutional delivery. While the Auxiliary Nurse Midwife is a key worker at the Sub Centre and Medical Officers manage PHCs, the CHC is staffed by specialist doctors. Misunderstanding these roles can impact the effectiveness of local health service coordination and implementation.

57. (B) P-3, Q-1, R-2
India's rural health infrastructure follows standardized population norms to ensure equitable access to services in plain areas. A Sub Health Centre is designed to serve 5,000 people, while a Primary Health Centre serves approximately 30,000. For more specialized care, a Community Health Centre acts as a referral unit for about 120,000 individuals. These norms are essential for planning health facilities and allocating human and financial resources effectively across diverse geographic regions.

58. (A) All citizens can access quality health services without suffering financial hardship.
Universal Health Care is a primary goal of modern health systems, ensuring that all citizens can access the quality medical services they need without experiencing financial distress. This concept focuses on removing economic barriers to healthcare through public funding, insurance, or subsidized services. By prioritizing both access and affordability, UHC aims to improve overall health outcomes and promote social equity, ensuring that healthcare is treated as a fundamental right rather than a luxury.

59. (D) Transferring authority and responsibility for health service delivery to lower levels of government, like PRIs.
Decentralization in the health sector involves the transfer of authority and responsibility for planning and managing health services from the central government to local levels. In India, this often means empowering Panchayati Raj Institutions to oversee local health centers and programs. By bringing decision-making closer to the community, decentralization aims to make health services more responsive to local needs, improve accountability, and foster greater community participation in public health management.

60. (B) To participate in the planning, implementation, and monitoring of local health programmes.
Panchayati Raj Institutions are envisioned as key partners in the decentralized management

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framework intentionally moves beyond a narrow focus on curative treatments, advocating instead for the maintenance of functional ability and overall well-being throughout the aging process.

16. (B) Bhore Committee
The Bhore Committee, established in 1943 and reporting in 1946, is formally known as the Health Survey and Development Committee. It provided a comprehensive blueprint for India's post-independence health system, recommending a three-tier structure of primary, secondary, and tertiary care. The committee emphasized the integration of preventive and curative health services and proposed the establishment of Primary Health Centres to serve rural populations across the nation.

17. (B) The fact that health outcomes for the elderly are systematically linked to their socioeconomic status.
The concept of social gradients in health highlights how health outcomes among the elderly are systematically influenced by their socioeconomic standing. Individuals with higher income, education, and social status generally experience better health compared to those in lower strata. This gradient suggests that inequalities in life conditions lead to disparities in morbidity and mortality, requiring policies that address the underlying social determinants of health to ensure equity.

18. (B) P-3, Q-2, R-1, S-4
Indian health committees played distinct roles in shaping medical infrastructure and workforce strategies over several decades. The Bhore Committee conceptualized the Primary Health Centre, while the Mudaliar Committee focused on consolidating those initial gains. The Kartar Singh Committee introduced the concept of Multipurpose Health Workers to streamline service delivery at the grassroots level. Finally, the Shrivastav Committee was instrumental in creating a specialized cadre of health assistants.

19. (C) To act as a policy think tank, providing strategic and technical advice to governments.
NITI Aayog serves as the premier policy think tank for the Government of India, providing strategic and technical advice on a wide range of issues, including health and population. It fosters cooperative federalism by involving states in the policy-making process and monitoring the implementation of national programs. While it does not directly implement schemes or manage hospital finances, its recommendations guide the long-term direction of national healthcare strategies.

20. (D) The unique health needs and well-being of elderly people.
Geriatric care is a specialized field of medicine that focuses exclusively on the unique health requirements and well-being of the elderly. This discipline addresses the management of multiple chronic conditions, the prevention of age-related disabilities, and the promotion of functional independence. By providing tailored medical and social support, geriatric care aims to improve the overall quality of life for senior citizens while addressing the complexities of the aging process.

21. (A) Both A and R are true and R is the correct explanation of A.
The Kartar Singh Committee's recommendations fundamentally transformed India's grassroots health workforce by integrating various vertical disease programs into a single delivery system. By creating the cadre of Multipurpose Health Workers, the committee ensured that a comprehensive package of health services reached the village level through a unified point of contact. This strategic shift addressed the inefficiencies of fragmented programs and strengthened the capacity of the rural health infrastructure significantly.

22. (D) Mukherjee Committee - Exclusively focusing on urban health services.
The Mukherjee Committee was primarily established to review the family planning program and its integration with health services, specifically delinking it from the malaria maintenance phase. It did not focus exclusively on urban health services, making that statement incorrect. In contrast, the Bhore Committee laid the PHC blueprint, the Mudaliar Committee reviewed progress, and the Chadha Committee managed the malaria maintenance phase, all of which represent correct historical pairings.

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The concept of Healthy Ageing, for instance, has gained prominence, with the WHO Frame Work for Healthy Ageing providing guidance for countries to adapt their health and social systems to the realities of an ageing population. This includes a focus on Geriatric care, which is becoming increasingly important in countries like India, addressing the unique health challenges of the elderly.

Based on the above source, attempt the following five questions.

296. The Sustainable Development Goals (SDGs) are described as a transition from the MDGs to a framework that is:
(A) Less focused on health and more on the environment
(B) Applicable only to developed countries
(C) A shorter-term agenda with fewer goals
(D) More comprehensive and universal in scope

297. What is the specific aim of SDG 3 as mentioned in the passage?
(A) To ensure healthy lives and promote well-being for all at all ages
(B) To exclusively focus on combatting HIV/AIDS and malaria
(C) To achieve the goals set by the Alma-Ata Declaration by 2016
(D) To provide a framework for geriatric care in developing nations

298. The WHO Frame Work for Healthy Ageing is designed to help countries:
(A) Reverse the process of population ageing
(B) Adapt health and social systems for an ageing population
(C) Focus solely on the Millennium Development Goals
(D) Implement geriatric care only in developed nations

299. According to the source, the Millennium Development Goals (MDGs) included direct targets related to:
(A) Healthy Ageing and Geriatric care
(B) Reducing child mortality and improving maternal health
(C) Adapting social systems for climate change
(D) The role of NITI Aayog in health policy

300. The passage implies that the evolution from MDGs to SDGs represents:
(A) An expansion and deepening of global development commitments
(B) A rejection of the principles of the Alma-Ata Declaration
(C) A narrowing of the global health agenda
(D) A shift in focus away from health

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creating unique state-level policies, they can effectively address local disease burdens and population profiles that may differ from national averages. This decentralized approach allows for more targeted resource allocation and the implementation of programs that are more relevant and responsive to the health needs of the local community.

31. (D) 1, 2, 3, 4, and 5
The development of India's health services was guided by a series of expert committees, each addressing specific systemic needs. The Bhore and Mudaliar committees provided comprehensive planning and assessment, while the Chadha and Mukherjee committees focused on integrating malaria and family planning services. The Jungalwalla Committee advocated for unified health service delivery. Collectively, these recommendations established the multi-tiered structure and integrated approach that define the current public health system in India.

32. (B) Tamil Nadu
Tamil Nadu was a pioneering state in India by formulating its own comprehensive state-level population policy before the announcement of the National Population Policy in 2000. This proactive approach allowed the state to focus on specific demographic goals, such as reducing fertility and maternal mortality, through targeted interventions and social development programs. The success of Tamil Nadu's policy served as a model for other states and influenced national-level strategies for population stabilization.

33. (B) Legalize and regulate abortion to ensure it is performed by qualified professionals under safe conditions.
The Medical Termination of Pregnancy Act was enacted to provide a legal framework for the safe and regulated termination of pregnancies in India. Its primary objective is to reduce maternal mortality and morbidity resulting from unsafe, illegal abortions. By specifying the conditions and qualified professionals permitted to perform the procedure, the Act ensures that women have access to safe medical services while preventing the misuse of abortion for unethical purposes.

34. (A) Both A and R are true and R is the correct explanation of A.
The Pre-Conception and Pre-Natal Diagnostic Techniques Act was specifically enacted to combat the misuse of medical technology for sex determination. This legislation aims to prevent female foeticide and address the declining child sex ratio in India by regulating the use of diagnostic tools. By prohibiting the disclosure of the fetus's sex, the Act serves as a vital legal mechanism for protecting the rights of the girl child and promoting gender equality.

35. (C) Control of Tobacco Products.
The COTPA Act of 2003 is a critical piece of legislation in India aimed at controlling the use and promotion of tobacco products. It prohibits smoking in public places, bans the advertisement of tobacco, and restricts sales to minors and near educational institutions. By regulating these aspects, the Act seeks to protect public health from the harmful effects of tobacco consumption and secondhand smoke, thereby reducing the burden of non-communicable diseases.

36. (D) Finalizing the child's name for birth registration.
Ante Natal Care under the RMNCH+A programme includes essential medical and nutritional interventions for pregnant women, such as tetanus toxoid immunization, iron and folic acid supplementation, and at least four check-ups. These components are designed to ensure the health of both the mother and the developing fetus. Finalizing a child's name is not a medical or programmatic component of antenatal care, as it is a personal administrative task performed after birth.

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37. (B) P-3, Q-1, R-2, S-4
Key health interventions are specifically designed to address various conditions and target groups within the public health system. Immunization prevents vaccine-preventable diseases, while iron and folic acid supplementation is a primary strategy for anemia prevention. Oral Rehydration Solution is used to manage childhood diarrhea, and post-natal care ensures the well-being of the mother and newborn after delivery. Together, these interventions form a comprehensive strategy for improving maternal and child health outcomes.

partnerships to provide affordable and accessible care throughout the country.

8. (A) The financial, health care, and social well-being of senior citizens.
The National Policy on Older Persons was established to ensure the comprehensive well-being of senior citizens across various life domains. It specifically focuses on providing financial security through pensions, accessible healthcare services tailored for aging needs, and social support to protect against isolation. By addressing these critical areas, the policy aims to empower the elderly, protect their legal rights, and promote a dignified life within the community.

9. (C) 1, 2 and 3 only
Social security frameworks for the elderly in India encompass a multi-faceted approach involving financial assistance, health services, and familial support. These policies prioritize pension schemes to provide economic stability while ensuring subsidized medical treatment and geriatric care. Additionally, the framework encourages the traditional role of families in caregiving, recognizing that legal and social mechanisms must work together to improve the overall quality of life for seniors.

10. (A) The process of developing and maintaining the functional ability that enables well-being in older age.
Healthy Ageing is defined by the World Health Organization as a process focused on developing and maintaining functional ability during older age. This ability enables individuals to be and do what they value, ensuring overall well-being despite physiological changes. It shifts the focus from the mere absence of disease to the preservation of physical and mental capacities, supported by age-friendly environments that allow seniors to remain active.

11. (A) Both Statement I and Statement II are true.
The National Youth Policy is designed to empower the younger population, enabling them to realize their full potential and contribute effectively to nation-building. A central strategy of this policy involves prioritizing skill development and fostering entrepreneurship to address unemployment and economic participation. By combining empowerment with practical career opportunities, the policy provides a comprehensive framework for the personal and professional growth of the country's youth.

12. (A) 2, 4, 1, 3
The evolution of India's health and population policies follows a specific chronological order reflecting changing national concerns. The first National Health Policy was launched in 1983, followed by the National Policy on Older Persons in 1999. The second National Population Policy was subsequently introduced in 2000. Finally, the third National Health Policy was announced in 2017, representing the most recent shift toward achieving universal healthcare coverage.

13. (C) National Policy on HIV/AIDS
State programs providing free antiretroviral therapy and conducting awareness campaigns to reduce social stigma are direct applications of the National Policy on HIV/AIDS. This policy focuses on the prevention of new infections while ensuring that those living with the virus have access to life-saving treatment and support. By combining medical intervention with efforts to eliminate discrimination, the policy aims to integrate patients back into society while managing the epidemic.

14. (D) It prioritizes industrial growth over environmental protection and public health.
The National Environment Policy recognizes the intrinsic link between environmental quality and human health, aiming to integrate ecological concerns into all development sectors. It focuses on the sustainable management and conservation of natural resources to safeguard the well-being of future generations. Therefore, any suggestion that the policy prioritizes industrial growth at the expense of environmental protection or public health is incorrect and contradicts the policy's fundamental sustainability goals.

15. (C) 1, 2, 3, and 4 only
The WHO Framework for Healthy Ageing emphasizes a comprehensive approach that includes creating age-friendly environments and aligning health systems with the specific needs of older populations. It also prioritizes developing robust systems for long-term care and encouraging innovation in geriatric research. However, the

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symptoms include hot flashes and mood swings, which are caused by changing hormonal levels. Furthermore, the decrease in estrogen during this period leads to a significantly increased risk of osteoporosis, requiring targeted health interventions and counseling. These symptoms can impact a woman's overall quality of life, necessitating supportive care and medical management during this phase.

46. (D) Ability to prevent unintended pregnancies.
The effectiveness of a family planning method is primarily measured by its ability to reliably prevent unintended pregnancies when used by a population. This indicator is essential for evaluating the success of contraceptive technologies and public health programs. While cost, availability, and user preference are important for adoption, the core purpose of any family planning method is pregnancy prevention, making it the most critical metric for assessing its clinical and public health value.

47. (A) 4, 3, 1, 2
India's family welfare programs have evolved through several key historical milestones. India became the first country in the world to launch a national family planning program in 1952. In 1977, the program was renamed the Family Welfare Programme to reflect a broader health perspective. Later, a target-free approach was introduced in 1996, and the National Rural Health Mission was launched in 2005 to strengthen the entire rural health infrastructure.

48. (B) A significant reduction in maternal and infant mortality rates.
A major achievement of the RMNCH+A programme in India has been the significant and steady reduction in maternal and infant mortality rates. By providing a continuum of care from pregnancy through childhood, the program has improved access to essential health services and institutional deliveries. These improvements reflect the success of integrated health interventions in addressing the primary causes of death among mothers and children, thereby enhancing the country's overall demographic profile.

49. (B) Provide dedicated and accessible healthcare services for the elderly.
The National Programme for Health Care of the Elderly was launched to provide dedicated and accessible healthcare services tailored to the needs of senior citizens. It aims to strengthen the capacity of the public health system to manage age-related conditions through specialized geriatric wards and clinics at different levels of the health infrastructure. By promoting community-based care and specialized medical attention, the program seeks to improve the health and longevity of the elderly.

50. (A) Diabetes
Non-communicable diseases are medical conditions that are not caused by infectious agents and cannot be transmitted from one person to another. Diabetes is a primary example of a non-communicable disease that requires long-term management and lifestyle interventions. In contrast, tuberculosis, HIV/AIDS, and malaria are all communicable diseases caused by bacteria, viruses, or parasites. Public health programs increasingly target non-communicable diseases due to their rising prevalence and impact on the global disease burden.

51. (C) 1, 2, 3, 4, and 5
India's national health frameworks encompass a wide range of legislative, clinical, and social interventions to improve public health. This includes laws like the PCPNDT and COTPA Acts, as well as clinical services such as post-natal care and infertility treatments. Additionally, the provision and promotion of various family planning methods are central to reproductive health strategies. Together, these components address diverse health needs across different life stages and social groups within the national health system.

52. (D) Determine the effects and outcomes of the policy on the population's health and well-being.
Impact assessment is a critical evaluation tool used to determine the actual effects and outcomes of a health policy on a target population. Unlike process evaluations that track activities, impact assessments focus on measuring changes in health status, such as reductions in disease prevalence or mortality rates. This process provides essential evidence for policymakers to understand the

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38. (B) Care provided during childbirth, including labor and delivery.
Natal care refers to the specialized medical attention and support provided to a mother and her baby during the process of childbirth. This includes the management of labor and the safe delivery of the newborn by qualified health professionals. Ensuring high-quality natal care is essential for preventing complications, reducing maternal and neonatal mortality, and promoting a safe transition for both the mother and child during the critical delivery period.

39. (D) Early diagnosis by health workers and appropriate case management.
Acute Respiratory Infection remains a leading cause of childhood mortality and is addressed in public health programs through early diagnosis and appropriate management. Health workers are trained to recognize signs of respiratory distress and provide timely interventions, such as antibiotics or referrals. This community-based approach ensures that children receive life-saving care quickly, reducing the risk of complications and death from common respiratory conditions like pneumonia in resource-limited settings.

40. (A) Periodic abstinence (Rhythm Method)
Periodic abstinence, commonly known as the rhythm method, is a traditional family planning technique that relies on identifying the woman's fertile period and avoiding intercourse during those days. Unlike modern methods such as intrauterine devices, oral contraceptive pills, or female sterilization, it does not involve the use of pharmaceutical drugs, barrier devices, or surgical procedures. While widely used historically, traditional methods generally have higher failure rates compared to modern clinical contraceptive options.

41. (D) 1, 2, 3, and 4
Modern family planning methods provide highly effective options for preventing unintended pregnancies compared to traditional techniques. For example, condoms offer the unique advantage of dual protection against pregnancy and sexually transmitted infections. Permanent methods like female sterilization provide a long-term solution for those who have completed their families. Recognizing the high failure rates of traditional methods is essential for providing comprehensive reproductive health counseling and improving overall contraceptive prevalence and maternal health.

42. (A) Increased social status and community respect.
Infertility often carries profound social and psychological consequences, particularly in societies where childbearing is highly valued. Women frequently face social stigma, ostracism, and marital distress as a result of being unable to conceive. These pressures can lead to significant mental health challenges, including feelings of guilt, depression, and anxiety. Far from increasing social status, infertility is often a source of diminished community respect and personal struggle for affected individuals and couples.

43. (D) Rhythm Method - Relies on avoiding intercourse during the fertile period.
Different family planning methods operate through distinct biological or behavioral mechanisms. The rhythm method is a behavioral approach that involves avoiding intercourse during the woman's fertile window. In contrast, vasectomy is a surgical method that prevents the release of sperm, and oral pills typically work by suppressing ovulation. Copper-T intrauterine devices primarily act by creating an environment in the uterus that is hostile to sperm and prevents fertilization rather than stopping ovulation.

44. (B) They have a significantly higher effectiveness rate when used correctly.
A primary advantage of modern contraceptive methods over traditional ones is their significantly higher effectiveness rate in preventing unintended pregnancies. While traditional methods like withdrawal or the rhythm method rely heavily on consistent user behavior and have high failure rates, modern methods like pills, IUDs, and injectables provide more reliable protection. This increased effectiveness is a critical factor in empowering individuals to make informed reproductive choices and improving overall maternal and child health.

45. (C) Hot flashes, mood swings, and increased risk of osteoporosis.
Menopause is a significant biological transition that often brings a range of socio-psychological and health challenges for women. Common

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of health services at the local level. Their role involves active participation in the planning, implementation, and monitoring of health programs to ensure they meet the specific needs of the community. By involving local leaders in health governance, the system promotes accountability and encourages the community to take ownership of public health outcomes, ultimately leading to more effective and sustainable interventions.

61. (D) 1, 2, 3, and 4
Health systems reforms in India include a variety of strategic interventions designed to improve service delivery and access. These reforms encompass promoting public-private partnerships, implementing social health insurance schemes, and strengthening the role of local self-governments in health management. Additionally, increasing public spending on health is a critical component of these efforts. Together, these strategies aim to create a more efficient, equitable, and responsive health system that can meet the needs of all citizens.

62. (D) The government contracting a private company to manage diagnostic services in a public hospital.
Public-Private Partnerships in the health sector often involve the government collaborating with private entities to improve service delivery and infrastructure. A common scenario is the government contracting a private company to manage specialized diagnostic services within a public hospital, leveraging private efficiency for public benefit. These partnerships aim to bridge gaps in public resources and expertise, ensuring that patients have access to advanced medical technologies while maintaining the public nature of the healthcare system.

63. (A) Providing supplementary nutrition, health check-ups, and pre-school education to children and mothers.
The Integrated Child Development Services scheme is a flagship program in India aimed at improving the health and nutritional status of children and mothers. It provides a comprehensive package of services, including supplementary nutrition, regular health check-ups, and non-formal pre-school education at Anganwadi centers. By addressing the multiple dimensions of child development, the ICDS scheme plays a vital role in reducing malnutrition and improving maternal health in rural and urban communities alike.

64. (B) The ministries responsible for water, sanitation, and education.
Inter-sectoral coordination is essential for improving public health outcomes, as many health determinants lie outside the healthcare sector itself. Effective coordination involves collaboration between the health ministry and departments responsible for clean water, sanitation, and education. By working together, these sectors can address the root causes of disease, such as poor hygiene and lack of knowledge. This integrated approach ensures that health interventions are supported by improvements in the overall living environment.

65. (B) Fairness in financing and delivering healthcare, often based on need rather than ability to pay.
Equity in health financing is a fundamental principle that emphasizes fairness in both the collection of health funds and the delivery of medical services. It implies that individuals should contribute based on their financial ability, while receiving care according to their specific health needs. By prioritizing those with greater needs and fewer resources, equity-focused financing aims to reduce health disparities and ensure that quality healthcare is accessible to all, regardless of socioeconomic status.

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66. (A) 2, 4, 1, 3
India's public health infrastructure is organized in an ascending hierarchy based on the complexity and specialization of services provided. The Sub Health Centre is the most basic tier, followed by the Primary Health Centre, which offers more comprehensive care under a medical officer. The Community Health Centre serves as a referral unit for specialized services, and the District Hospital represents the apex level of medical care within a district, providing advanced diagnostic and surgical facilities.

67. (C) A disease surveillance and vector control program for malaria.
Public goods in health are characterized by being non-rivalrous and non-excludable, meaning one

person's use does not reduce its availability to others, and no one can be easily excluded from its benefits. A disease surveillance and malaria vector control program is a classic example, as it protects the entire community simultaneously. Unlike private medical treatments, public goods provide broad benefits that individual market transactions cannot efficiently provide, necessitating government funding and intervention.

68. (D) An externality.
An externality occurs when an individual's actions have an unintended impact on the health or well-being of others who were not part of the original decision. Positive externalities, like vaccination, protect the wider community, while negative externalities, like smoking in public, harm others through secondhand exposure. Recognizing externalities is crucial for public health policy, as it provides a clear rationale for government regulations and interventions to promote beneficial behaviors and restrict harmful ones.

69. (C) Systematically tracking the flow of funds in a country's health system.
National Health Accounting is a standardized system used to systematically track the flow of financial resources within a country's health system. It provides a comprehensive overview of how money is raised, how it is pooled, and how it is ultimately spent on health services and products. By analyzing these financial flows, policymakers can assess the efficiency and equity of health spending, helping to inform better resource allocation and long-term health planning.

70. (B) Pooling of risks and resources, where many people contribute to a fund to pay for the healthcare costs of the few who fall sick.
The primary principle of social health insurance is the collective pooling of health risks and financial resources. In this system, many individuals contribute to a common fund, which is then used to cover the healthcare expenses of the smaller number of members who fall ill. This mechanism provides financial protection against catastrophic health costs and ensures that individuals can access necessary medical care based on need rather than their immediate ability to pay.

71. (C) 1, 2, 3, and 4 only
Economic principles play a vital role in health financing, emphasizing efficiency, the impact of externalities, and the nature of public goods. Efficiency focuses on maximizing health benefits from limited resources, while externalities highlight how individual actions affect others. Public goods, such as disease control, provide broad community benefits. Investing in health is also recognized as an investment in human capital. However, National Health Accounts primarily track financial flows rather than directly measuring clinical quality.

72. (A) Emphasizes health issues that transcend national boundaries and require global cooperation.
Global health is distinct from international health because it focuses on health issues and determinants that transcend national boundaries and require collective, worldwide cooperation. This perspective recognizes that problems like pandemics, climate change, and chronic diseases affect populations globally and cannot be solved by any one nation alone. Global health emphasizes partnership and shared responsibility, moving beyond traditional bilateral aid to address the interconnected nature of health in a globalized world.

73. (C) The patterns of disease and causes of death, from communicable to non-communicable diseases.
The epidemiological transition describes a long-term shift in the patterns of disease and causes of death within a population. As countries develop, the primary burden of illness typically moves from infectious and communicable diseases to chronic, non-communicable conditions like heart disease and diabetes. This transition is driven by improvements in sanitation, nutrition, and medical care, alongside changes in lifestyle and an aging population, presenting new challenges for health systems and policies.

74. (A) Both A and R are true and R is the correct explanation of A.
The United Nations plays a pivotal role in addressing global health and population matters

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through its specialized agencies. Organizations like the World Health Organization, UNFPA, and UNICEF are specifically mandated to coordinate international efforts in health, family planning, and child welfare. By setting global standards and providing technical support to member nations, these agencies facilitate collective action to improve health outcomes and promote human rights on a worldwide scale.

75. (D) Cairo, 1994
The 1994 Cairo International Conference on Population and Development marked a historic paradigm shift in global population policy. It moved the focus away from rigid demographic targets toward recognizing individual rights, particularly women's reproductive and sexual health rights. The conference emphasized that empowering women and improving their health and education are the most effective ways to achieve population stabilization. This rights-based approach has since become the cornerstone of modern global population strategies.

76. (B) Health for All by the year 2000 through Primary Health Care.
The Alma Ata Declaration of 1978 is celebrated for launching the global "Health for All" call, identifying primary healthcare as the essential key to achieving this goal. It emphasized the importance of community participation, multi-sectoral collaboration, and the use of appropriate technology to provide basic health services. By focusing on equity and accessibility, the declaration sought to ensure that all individuals could lead socially and economically productive lives through a decentralized health system.

77. (B) P-2, Q-1, R-4, S-3
Global health initiatives and conferences have established key themes that shape international development priorities. The Bucharest conference famously proposed that development is the best contraceptive, while Alma Ata established the primary healthcare framework. The Cairo conference placed a critical focus on individual reproductive rights, and the Sustainable Development Goals introduced the current seventeen-goal framework for universal progress. Together, these milestones reflect the evolution of global strategies to address health, population, and sustainability.

78. (D) Advanced tertiary care like organ transplantation
Primary Health Care, as defined by the Alma Ata Declaration, includes essential components like health education, maternal and child health care, and the provision of essential drugs. It also emphasizes basic sanitation and nutrition as foundational elements of public health. However, advanced tertiary care, such as organ transplantation, falls outside the scope of primary care, which focuses on providing accessible and affordable services at the community level to address the most common health problems.

79. (A) Reducing child mortality, improving maternal health, and combating HIV/AIDS, malaria.
The Millennium Development Goals, established in 2000, set specific, time-bound targets to address major global challenges by 2015. Three of these eight goals were directly related to health: reducing child mortality, improving maternal health, and combating major diseases like HIV/AIDS and malaria. These goals provided a unified framework for international development efforts, successfully mobilizing resources and political commitment to improve health outcomes in developing nations and across the globe.

80. (B) Ensure healthy lives and promote well-being for all at all ages.
Sustainable Development Goal 3 is the primary health-related goal within the current global development framework, aiming to ensure healthy lives and promote well-being for all individuals at all ages. It expands upon the earlier health targets of the Millennium Development Goals by including broader objectives like achieving universal health coverage and addressing non-communicable diseases. SDG 3 emphasizes an integrated and universal approach to health, recognizing its critical role in overall sustainable development.

81. (D) 1, 2, 3, and 4
Global health is governed by a network of specialized agencies and landmark intergovernmental conferences that set the international agenda. WHO serves as the primary coordinating authority for health, while UNFPA focuses on reproductive health and population issues. Historical conferences like those in Bucharest and Mexico City established

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foundational principles for population planning and reaffirmed the importance of integrated development. Together, these institutions and agreements facilitate global cooperation to address complex health and demographic challenges.

82. (A) Higher per capita expenditure on health and more robust infrastructure in developed countries.
A fundamental difference between the health systems of developed and developing countries is the significantly higher per capita expenditure on health and more advanced infrastructure found in developed nations. These countries often have established systems of universal health coverage and social security, whereas developing nations frequently struggle with limited resources and basic infrastructure. This disparity impacts everything from the quality of available medical technology to the ability to manage chronic versus infectious disease burdens.

83. (C) Conducts biomedical, social science, and public health research.
The Population Council is a renowned international non-profit organization that plays a critical role in conducting biomedical, social science, and public health research. Its work focuses on improving reproductive health, expanding contraceptive choices, and addressing population-related challenges globally. By providing high-quality evidence and innovative solutions, the council informs national and international policies, helping to improve health outcomes and promote the rights and well-being of people in diverse settings across the world.

84. (D) The debate between direct family planning programs versus socioeconomic development as fertility solutions.
The 1974 Bucharest World Population Conference was marked by a significant ideological debate regarding the best approach to population stabilization. Developing nations argued that socioeconomic development was the most effective way to reduce fertility, leading to the famous slogan "development is the best contraceptive." This was contrasted with the perspective favoring direct family planning interventions. This debate ultimately shaped global policies by highlighting the need for an integrated approach that combines both development and health services.

85. (C) A more comprehensive, universal, and integrated approach to development.
The transition from the Millennium Development Goals to the Sustainable Development Goals represents a shift toward a more comprehensive, universal, and integrated development agenda. Unlike the MDGs, which primarily targeted developing nations, the SDGs apply to all countries regardless of their development level. This current framework recognizes the interconnected nature of health, economic growth, environmental protection, and social equity, advocating for a holistic approach to ensuring a sustainable future for all global citizens.

86. (B) Reforming medical education and addressing the mismatch between health needs and personnel.
The Bajaj Committee was established to address critical issues in health manpower planning and medical education in India. Its report highlighted the mismatch between the country's health needs and the existing training of medical personnel. The committee recommended significant reforms to make medical education more relevant to community health and advocated for better management of health human resources. These recommendations aimed to ensure a more effective and balanced distribution of healthcare professionals across the nation.

87. (D) The Maintenance and Welfare of Parents and Senior Citizens Act, 2007
The Maintenance and Welfare of Parents and Senior Citizens Act of 2007 is a landmark legislation in India that provides legal protection for the elderly. It makes it a mandatory legal obligation for children or relatives to provide maintenance and care for their parents and senior citizens. By establishing specialized tribunals to resolve disputes, the Act ensures that the elderly have a mechanism to claim their rights to financial security, healthcare, and overall well-being.

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88. (A) Both A and R are true and R is the correct explanation of A.
Policies related to reproductive health are a central component of India's public health strategy due to the historically high rates of maternal mortality and morbidity. Addressing these challenges is essential for improving the health of women and reducing the burden of disease across the population. By focusing on maternal care, family planning, and safe delivery, these programs aim to ensure better health outcomes, which are critical for the overall social and economic development of the country.

89. (C) Night blindness and increased susceptibility to infections.
Vitamin A deficiency is a significant public health concern among young children, primarily causing night blindness and increasing their susceptibility to various infections. Within the framework of the Reproductive and Child Health programme, addressing this deficiency is a priority to prevent childhood blindness and reduce mortality. Regular supplementation programs are essential for ensuring that children maintain adequate vitamin A levels, thereby supporting their immune system and overall growth and development in early life.

90. (A) The health department working with the public works department to ensure safe drinking water supply.
Inter-sectoral coordination occurs when different government departments work together to achieve a common health-related goal. A prime example is the health department collaborating with the public works department to ensure the provision of safe drinking water. Since water quality is a major determinant of diseases like diarrhea and cholera, this collaboration is essential for improving public health outcomes that neither department could achieve alone, demonstrating the integrated nature of health determinants.

91. (B) 1, 2, 3, and 4 only
India's public health infrastructure follows a structured hierarchy from Sub Centres to District Hospitals, each with specific staffing and service mandates. Sub Centres are staffed by health workers, while PHCs and CHCs provide increasing levels of medical and specialist care. District hospitals serve as the apex institutions for specialized healthcare within a district. While the general structure is national, some variations exist across different states, reflecting the decentralized nature of health service organization in India.

92. (B) The ability of a programme to achieve its stated health goals or outcomes.
In the economic evaluation of health programs, effectiveness refers to the degree to which a program achieves its intended health goals or outcomes in a real-world setting. This measure is essential for determining whether an intervention is successful in improving public health, such as reducing disease incidence or mortality rates. Understanding effectiveness allows policymakers to prioritize programs that deliver the best health results, ensuring that resources are used to implement interventions that truly work for the population.

93. (C) To eliminate out-of-pocket expenditure for pregnant women and sick infants for services in public health facilities.
The Janani Shishu Suraksha Karyakram is a key scheme under the National Health Mission designed to eliminate out-of-pocket expenses for pregnant women and sick infants in public health facilities. It provides free services including institutional delivery, diagnostics, medicines, and transport. By removing financial barriers, JSSK encourages institutional care and ensures that families do not face catastrophic health costs, ultimately aiming to reduce maternal and infant mortality rates through better access to essential healthcare.

94. (D) Delivering services and information closer to people's homes and involving the community.
The shift from a clinical to a community-based approach in family planning signifies a strategic move toward delivering services and information directly to where people live. This approach emphasizes community involvement and the use of frontline workers like ASHAs to provide personalized counseling and contraceptive supplies. By making services more accessible and culturally sensitive, this strategy aims to increase the adoption of family planning methods and improve reproductive health outcomes at the grassroots level.

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95. (A) Alma Ata (1978) - "Health for All"
Landmark international health and population conferences are often associated with defining slogans that represent their core themes. The Alma Ata conference of 1978 is famously linked to the call for "Health for All" through primary healthcare. While other conferences like those in Bucharest and Cairo had significant themes related to development and reproductive rights, the "Health for All" slogan remains the most iconic representation of the global commitment to equitable healthcare access for everyone.

96. (B) Promoting voluntary counseling and testing, and preventing new infections.
A key strategy of the National Policy on HIV/AIDS involves promoting voluntary counseling and testing to encourage individuals to know their status and access care early. The policy also focuses heavily on preventing new infections through awareness campaigns and targeted interventions for high-risk groups. By emphasizing rights-based and non-discriminatory approaches, the strategy aims to manage the epidemic effectively while ensuring that those affected receive the necessary medical treatment and social support they need.

97. (A) Both Statement I and Statement II are true.
Health policies in developed and developing countries address different challenges based on their economic and demographic contexts. Developed nations often struggle with the rising costs associated with advanced medical technology and an aging population requiring chronic care. In contrast, developing countries must prioritize building basic health infrastructure and tackling the persistent burden of communicable diseases. Both statements accurately reflect the diverse health policy landscapes and the specific medical priorities faced by nations at different development stages.

98. (A) A healthy population is more productive and contributes to economic development.
The concept of investment in health is based on the economic rationale that a healthy population is more productive and resilient, directly contributing to national economic development. Spending on health is seen as building human capital, which leads to increased labor productivity and long-term economic gains. By reducing the burden of disease and disability, health investments enable individuals to participate more effectively in the workforce, fostering social stability and sustainable growth for the entire country.

99. (C) High birth and high death rates to low birth and low death rates.
Demographic transition theory describes the historical shift in population dynamics as societies undergo development and industrialization. It characterizes the transition from a state of high birth and high death rates, which leads to slow population growth, to a state of low birth and low death rates, resulting in population stabilization. This process is typically accompanied by improvements in healthcare, sanitation, and education, representing a fundamental change in the demographic structure and growth patterns of a nation.

100. (D) To reduce malnutrition and improve the nutritional status of the population.
The primary objective of the National Nutrition Policy is to systematically reduce malnutrition and improve the overall nutritional status of all citizens, particularly vulnerable groups like children and mothers. This policy integrates efforts across different sectors, including health, agriculture, and education, to ensure food security and promote healthy dietary practices. By addressing the root causes of undernutrition and micronutrient deficiencies, the policy aims to enhance the physical and cognitive development of the entire population.

101. (C) A specific, time-bound Goal
National health policies often include specific, time-bound goals to provide clear targets for public health interventions. The commitment in the National Health Policy 2002 to eradicate polio by a certain year is a classic example of such a goal. These targets help in mobilizing resources, focusing programmatic efforts, and providing a measurable benchmark for assessing progress. Setting specific timelines ensures accountability and helps drive the implementation of strategies needed to achieve major health milestones.

102. (B) Jungalwalla Committee
The Jungalwalla Committee, also known as the Committee on Integration of Health Services,

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was established in 1964 to address the challenges of fragmented, vertical health programs. Its report, submitted in 1967, emphasized the importance of unified health service delivery and recommended a common seniority for medical cadres. By advocating for the integration of medical care, public health, and family planning services, the committee laid the groundwork for a more efficient and coordinated national health system in India.

103. (A) 3, 2, 1, 4
The development of India's health system was guided by several key committees that reported at different historical stages. The Bhore Committee provided the foundational report in 1946, followed by the Mudaliar Committee in 1962, which assessed post-independence progress. The Kartar Singh Committee recommended the introduction of multipurpose health workers in 1973, and the Shrivastav Committee followed in 1975 with its focus on medical education and community health. Together, these reports shaped modern health infrastructure.

104. (A) A condition of the body or mind that makes it more difficult for the person to do certain activities and interact with the world around them.
In the context of population policies, disabilities are defined as physical or mental conditions that create barriers to performing daily activities or interacting with the environment. Policies targeting this group aim to ensure barrier-free access, social inclusion, and the provision of necessary medical and rehabilitative services. By recognizing these challenges, frameworks seek to empower individuals with disabilities, protecting their rights and ensuring they have equal opportunities to participate in all aspects of social and economic life.

105. (C) The specific Mental Health problems of the ageing population.
Government initiatives providing counseling and support for elderly individuals suffering from loneliness and depression specifically target the mental health needs of the aging population. As individuals age, they may face significant social changes and health challenges that impact their psychological well-being. By offering specialized mental health interventions, policies aim to address these issues, promoting better quality of life and ensuring that the mental health of senior citizens is treated with the same importance as their physical health.

106. (A) Both A and R are true and R is the correct explanation of A.
The National Health Mission prioritizes the RMNCH+A strategy to provide a continuous and integrated spectrum of care across different life stages. This continuum-of-care approach is essential because it addresses the specific health needs of individuals from birth through adolescence, ensuring that no stage is neglected. By linking interventions at each level, the mission aims to effectively break the cycle of mortality and morbidity, leading to sustainable improvements in health outcomes for both mothers and children nationwide.

107. (D) The mother and newborn in the weeks following delivery.
Post Natal Care is a critical component of maternal health programs, focusing on monitoring the health and well-being of both the mother and the newborn during the weeks immediately following delivery. This period is vital for identifying potential complications, supporting breastfeeding, and ensuring the newborn receives necessary vaccinations and care. High-quality post-natal services are essential for reducing maternal and neonatal mortality and promoting a healthy start for both the mother and her child.

108. (B) High failure rate due to irregularity of menstrual cycles and difficulty in correct use.
A major disadvantage of traditional family planning methods, such as the rhythm method, is their high failure rate. This is primarily due to the natural irregularity of menstrual cycles and the difficulty users face in correctly identifying fertile windows. Unlike modern clinical methods, traditional techniques require constant monitoring and behavioral discipline, making them less reliable for preventing unintended pregnancies. This highlight the importance of providing access to more effective and modern contraceptive options in public health programs.

109. (C) 1, 2 and 3 only
India's rural health infrastructure is designed as a tiered system, beginning with the Sub Health

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Centre as the primary point of contact. This is followed by the Primary Health Centre, which is managed by a medical officer, and the Community Health Centre, which serves as a referral unit for specialized care. While this general framework is national, state governments have the flexibility to adapt the structure to their local contexts, meaning it is not rigidly identical everywhere.

110. (D) Achieving the maximum possible health benefit from the resources used.
The principle of efficiency in public health financing involves maximizing health benefits and outcomes while using the available financial and human resources as effectively as possible. It focuses on achieving the best results with minimal waste, ensuring that every unit of investment contributes significantly to improving public health. Efficiency is a critical goal for policymakers, as it allows for the expansion of services and the improvement of health systems even within the constraints of limited public budgets.

111. (A) United Nations Population Fund (UNFPA)
The United Nations Population Fund is the primary international agency dedicated to addressing global population issues, family planning, and reproductive health. UNFPA works with governments to improve access to sexual and reproductive health services, promote maternal health, and ensure that every pregnancy is wanted and every childbirth is safe. By focusing on these critical areas, the agency plays a vital role in empowering individuals, particularly women, and achieving sustainable development goals related to population and health.

112. (B) Alma Ata Declaration (Health for All) - Target year 2000
The Alma Ata Declaration of 1978 famously established the target of achieving "Health for All" by the year 2000 through the implementation of primary healthcare. Other global frameworks like the Millennium Development Goals spanned from 2000 to 2015, followed by the Sustainable Development Goals from 2016 to 2030. The Cairo Programme of Action set a twenty-year plan starting in 1994. Correctly identifying these timelines is essential for understanding the historical progression of global health and development commitments.

113. (B) 2.5%
The National Health Policy of 2017 outlines a commitment to significantly increase public health expenditure to 2.5% of India's Gross Domestic Product in a time-bound manner. This target aims to address the long-standing issue of underfunding in the health sector and reduce high out-of-pocket expenses for citizens. By increasing the budget, the government seeks to strengthen public health infrastructure, improve service delivery, and move closer toward the goal of achieving universal health coverage for all.

114. (A) Bhore Committee
The Bhore Committee report of 1946 was the first to recommend the creation of a cadre of "social physicians" who would be trained to view health in its broad social context. These professionals were envisioned to lead the primary healthcare centers and integrate preventive, promotive, and curative services for the community. This innovative concept reflected the committee's forward-looking approach to medical education and its commitment to building a comprehensive, socially responsible health system for independent India.

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115. (C) A shift from a narrow family planning focus to a broader reproductive health and rights-based approach.
The evolution of India's population policy is characterized by a significant shift from a narrow, target-oriented focus on family planning to a broader reproductive health and rights-based approach. This transformation, catalyzed by the 1994 Cairo conference, emphasizes individual health, empowerment, and voluntary participation. Modern policies prioritize meeting the unmet needs of the population and providing a comprehensive range of health services, moving away from coercive measures to ensure that demographic goals are achieved through informed choice.

116. (D) 1, 2, 3 address non-communicable; 4 and 5 address communicable.
Public health programs in India are categorized based on whether they target non-communicable or communicable diseases. Programs for tobacco control, mental health, and diseases like cancer and diabetes address non-communicable conditions that require long-term management

and lifestyle changes. In contrast, the National AIDS Control Programme and the Vector Borne Disease Control Programme focus on communicable illnesses that are transmitted through infectious agents. Understanding these categorizations is essential for designing effective prevention and treatment strategies for different health challenges.

117. (C) A conditional cash transfer scheme to promote institutional deliveries.
Janani Suraksha Yojana is a key safe motherhood intervention under the National Health Mission that uses conditional cash transfers to encourage pregnant women to opt for institutional deliveries. By providing financial assistance to low-income women who deliver in government or accredited private facilities, the scheme aims to reduce maternal and neonatal mortality. JSY represents a strategic approach to improving health outcomes by addressing financial barriers and promoting professional medical care during the critical period of childbirth.

118. (B) Diagnosis and management of common and treatable causes of infertility at district levels.
Infertility management in government health programs focuses on providing diagnosis and treatment for common and manageable causes at the district hospital level. This approach aims to make basic infertility care accessible and affordable to couples who might otherwise face social stigma or financial hardship. By integrating these services into the public health system, the program addresses a critical but often neglected aspect of reproductive health, providing medical and psychological support to those struggling to conceive.

119. (D) An individual smoking in a public place, exposing others to secondhand smoke.
A negative externality in health occurs when an individual's behavior imposes health risks or costs on others who did not choose to be exposed to them. Public smoking is a prime example, as secondhand smoke can cause serious respiratory and cardiovascular problems for non-smokers. Policies like the COTPA Act are designed to mitigate these negative externalities by restricting harmful behaviors in shared spaces, thereby protecting the health and well-being of the wider community from individual actions.

120. (A) It was held amidst a changed political climate, with renewed emphasis on family planning programs.
The 1984 World Population Conference in Mexico City took place during a shifting political climate that saw a renewed global emphasis on the importance of direct family planning programs. While it built upon the foundational work of the Bucharest conference, it also reflected the growing recognition of the role of contraceptive services in achieving demographic goals. This conference reaffirmed international commitments to population planning and emphasized the need for continued support for reproductive health and family welfare initiatives worldwide.

121. (C) The central government's role is limited to international health treaties only.
While state governments in India are primarily responsible for delivering health services, the central government plays a far more extensive role than just managing international treaties. It is responsible for national health policy formulation, technical guidance, and funding major centrally sponsored schemes like the National Health Mission. The center also regulates medical education and coordinates responses to national health emergencies. Any suggestion that its role is limited solely to international matters is an incorrect representation of India's health governance.

122. (A) links health services across different life stages and levels of care.
The RMNCH+A approach is described as a continuum of care because it systematically links health services across different life stages, from pregnancy and birth through childhood and into adolescence. This integrated framework ensures that individuals receive appropriate health interventions at every critical point in their lives, preventing gaps in care that could lead to poor health outcomes. By connecting these stages, the strategy aims to improve overall health, reduce mortality, and break the intergenerational cycle of morbidity.

123. (D) Cost-effectiveness analysis
Cost-effectiveness analysis is a method of economic evaluation that compares the costs of different health interventions with their health

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outcomes measured in natural units, such as years of life saved or cases of disease prevented. This approach allows policymakers to identify which intervention provides the most health benefit for a given amount of money. By using natural units, it facilitates comparisons between programs targeting the same health issue, helping to ensure that limited resources are allocated to the most efficient strategies.

124. (B) Prescribing and dispensing allopathic medicines for major illnesses.
Anganwadi workers play a crucial role in coordinating with the health sector by assisting in immunization, identifying malnourished children for referral, and distributing supplementary nutrition. They act as frontline community workers under the ICDS scheme to support maternal and child health. However, they are not medical professionals and are not authorized to prescribe or dispense allopathic medicines for major illnesses. Their primary focus remains on nutrition, non-formal education, and basic health facilitation within the village community.

125. (C) Child Health
The Universal Immunization Programme is a cornerstone of child health initiatives in India, aiming to protect children from several life-threatening vaccine-preventable diseases. By providing free vaccinations across the country, the program has significantly reduced childhood morbidity and mortality from illnesses like polio, measles, and diphtheria. The success of the UIP reflects a major achievement in public health, demonstrating the power of large-scale preventive interventions in ensuring a healthy start for every child and improving long-term health.

126. (D) The COTPA Act, 2003
The COTPA Act of 2003 is a pivotal legislation aimed at curbing the harmful effects of tobacco by prohibiting smoking in public places and restricting the advertisement of tobacco products. It also bans the sale of tobacco to minors and near educational institutions to protect the younger generation from addiction. By regulating these activities, the Act seeks to reduce tobacco consumption and its associated health risks, such as cancer and respiratory diseases, thereby improving overall public health.

127. (D) Statement I is false, but Statement II is true.
The Bhore Committee report was submitted in 1946, providing a comprehensive blueprint for India's post-independence health system. A key recommendation of the committee was the establishment of Primary Health Centres, each serving a population of 40,000, to provide integrated health services. However, because the committee was formed and reported before India gained independence in 1947, it is technically a pre-independence document that significantly influenced subsequent national policies. This historical distinction is important for understanding the evolution of health planning.

128. (B) Information from a public health campaign about hygiene.
Public goods in health are characterized by being non-rivalrous and non-excludable, meaning they benefit the entire population without individual consumption reducing their availability. Information provided through public hygiene campaigns is a perfect example, as the knowledge shared can be used by everyone simultaneously to improve their health. Unlike private goods like specific medicines or hospital beds, public health information provides broad communal benefits that are essential for disease prevention and are typically funded by the government for everyone's advantage.

129. (B) The Rashtriya Swasthya Bima Yojana (RSBY) and Ayushman Bharat (PM-JAY).
Social health insurance in India is exemplified by large-scale schemes like the Rashtriya Swasthya Bima Yojana and Ayushman Bharat. These programs aim to provide financial protection to low-income and vulnerable families by covering the costs of hospitalization and secondary and tertiary care. By pooling risks and resources, these insurance mechanisms reduce the burden of high out-of-pocket health expenditures and improve access to quality medical services, representing a critical step toward achieving universal health coverage in the country.

130. (A) Tuberculosis
Communicable diseases are illnesses caused by infectious agents that can be transmitted from

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one person to another through various means. Tuberculosis is a major communicable disease that remains a significant public health priority in India. In contrast, hypertension, cancer, and osteoporosis are non-communicable diseases that are not infectious. Public health programs target communicable diseases like TB through systematic screening, treatment, and prevention strategies to control their spread and reduce the overall national disease burden and mortality.

131. (A) P-3, Q-4, R-1, S-2
Economic concepts in health like equity and efficiency serve as critical guiding principles for policy evaluation. Equity focuses on fairness in service distribution based on individual need rather than wealth, while efficiency ensures resources are optimized to produce the best possible health outcomes. Effectiveness measures the actual achievement of health goals, whereas externalities describe the unintended impacts that one person's health choices have on others. Understanding these terms is essential for analyzing the performance and impact of various health interventions.

132. (D) Management of infectious diseases and maternal and child health.
Health systems in developing countries often prioritize the management of infectious diseases and the improvement of maternal and child health due to the significant burden these conditions place on their populations. With limited resources, these nations focus on foundational interventions like immunization, safe delivery, and basic sanitation to reduce high mortality rates. This focus contrasts with developed nations, which often have more established systems for managing chronic conditions, reflecting the different epidemiological challenges faced at various development levels.

133. (C) Ensure universal access to primary and secondary education.
Sustainable Development Goal 3 specifically targets health-related outcomes, such as ending major epidemics, reducing maternal mortality, and achieving universal health coverage. Its objective is to ensure healthy lives and promote well-being for all at all ages. While ensuring universal access to primary and secondary education is a critical global development goal, it falls under SDG 4 (Quality Education) rather than SDG 3. This distinction highlights the specialized but interconnected nature of the different Sustainable Development Goals.

134. (B) Provide dedicated, affordable, and quality long-term care for the elderly.
The National Programme for Health Care of the Elderly is designed to address the specialized health needs of the aging population by providing dedicated and affordable long-term care. It aims to strengthen the public health system to offer geriatric services through specialized wards and clinics at different levels of care. By promoting both medical management and community-based support, the program seeks to improve the health status and longevity of senior citizens, ensuring they lead dignified and healthy lives.

135. (D) National Nutrition Policy - Exclusively focused on increasing grain exports.
The National Nutrition Policy is designed to reduce malnutrition and improve the nutritional status of the population, not to focus on grain exports. This policy integrates efforts across health, agriculture, and education to ensure food security and healthy dietary practices. In contrast, the National Population Policy focuses on stabilization, the National Health Policy on universal coverage, and the HIV/AIDS policy on prevention and care. Misunderstanding a policy's primary focus can lead to incorrect conclusions about its objectives.

136. (A) Both A and R are true and R is the correct explanation of A.
Inter-sectoral coordination is essential for improving public health because health is determined by a wide range of social factors beyond medical care. Elements like clean water, basic sanitation, adequate nutrition, and quality education all play a critical role in preventing disease and promoting well-being. By ensuring that different government departments work together, policies can address these social determinants of health more effectively, leading to more sustainable and comprehensive health outcomes for the entire population.

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151. (D) Societal pressures and the high value placed on women's role as mothers.
The social and psychological consequences of infertility are often more severe for women due to profound societal pressures and the high cultural value placed on motherhood. In many communities, a woman's social status and identity are closely tied to her ability to bear children. When unable to conceive, women often face intense stigma, ostracism, and feelings of personal failure. Addressing these societal challenges requires both medical interventions and social awareness programs to support individuals and reduce the burden of discrimination.

152. (A) Population stabilization and the gradual ageing of the global population.
The global demographic transition describes a worldwide trend where many nations are moving from high birth and death rates to low rates, eventually leading to population stabilization. This process is accompanied by a significant increase in life expectancy, resulting in the gradual aging of the global population. This shift presents new challenges for health systems and economies as they adapt to the needs of a growing elderly population while managing the social and financial implications of a changing demographic structure.

153. (C) To ensure better health outcomes for the mother and child, and provide opportunities for female education.
Policies related to the legal age at marriage are designed to improve health outcomes for both mothers and their children by preventing early pregnancies. Delaying marriage also provides greater opportunities for girls to complete their education and participate in the workforce, leading to overall social and economic empowerment. By promoting a higher age at marriage, these policies contribute to population stabilization and the reduction of maternal and infant mortality, which are critical goals for the development and well-being of the nation.

154. (A) Mukherjee Committee
The Mukherjee Committee, reporting in 1965, was instrumental in recommending the delinking of the family planning program from the maintenance phase of malaria control activities. It proposed a separate staff for family planning at the district and block levels to ensure that the program received dedicated attention and resources. This strategic shift recognized the growing importance of population control as a national priority and laid the groundwork for a more specialized and effective family welfare administrative structure in India.

155. (A) Both A and R are true and R is the correct explanation of A.
The National Health Policy 2017 advocates for an expanded role for the private sector through "strategic purchasing" of services and the promotion of public-private partnerships. This approach recognizes that the public sector alone may not meet all the health needs of the population. By leveraging the capacity and efficiency of private providers, the government aims to improve access to quality care while focusing public resources on essential preventive and promotive services, ultimately working toward the goal of universal health coverage.

156. (B) A significant and steady decrease in the number of elderly people in the population.
Geriatric care in India faces several significant challenges, including a shortage of trained healthcare professionals and the rising burden of non-communicable diseases. Additionally, the traditional joint family support system is breaking down, leaving many elderly individuals without adequate social care. Far from seeing a decrease, India is experiencing a steady and significant increase in its elderly population due to rising life expectancy. This demographic shift necessitates the urgent development of more robust and specialized health services for senior citizens across the country.

157. (B) P-2, Q-1, R-4, S-3
Indian health legislation addresses diverse social and medical challenges through specific legal frameworks. The Medical Termination of Pregnancy Act regulates safe abortion services, while the Pre-Conception and Pre-Natal Diagnostic Techniques Act prohibits sex selection to improve the sex ratio. The Cigarettes and Other Tobacco Products Act focuses on tobacco control, and the Maintenance and Welfare Act mandates that children support their elderly parents financially. Together, these laws provide essential legal protections and regulate medical

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of the unique health needs of young people aged ten to nineteen. This phase of life is critical for addressing issues such as nutritional anemia, sexual and reproductive health, and mental well-being. By including adolescents in the continuum of care, the strategy aims to provide them with the necessary health services and information, ensuring a healthy transition into adulthood and improving long-term demographic outcomes.

145. (B) It provides protection against both pregnancy and Sexually Transmitted Infections (STIs).
A key advantage of using condoms as a family planning method is that they offer dual protection, effectively preventing both unintended pregnancies and the transmission of sexually transmitted infections, including HIV. Unlike many other contraceptive methods that only focus on pregnancy prevention, condoms serve a vital public health role in controlling the spread of STIs. This dual benefit makes them a critical component of reproductive health programs, particularly for high-risk groups and for promoting safe sexual practices.

146. (A) 1, 2, 3, and 4 only
Key health committees have provided pivotal recommendations that shaped India's public health system over several decades. The Bhore Committee conceptualized the PHC, while the Mudaliar and Kartar Singh committees focused on consolidation and the introduction of multipurpose health workers. The Shrivastav Committee emphasized the importance of referral complexes and community health assistants. While the Chadha Committee did manage malaria control, it was not specifically focused on filaria control, making that statement an incorrect representation of its primary historical mandate.

147. (C) Introducing changes in governance, financing, and delivery to improve performance.
Health systems reforms involve introducing strategic changes in how healthcare is governed, financed, and delivered to enhance the overall performance of the system. These reforms aim to improve efficiency, ensure equitable access, and enhance the quality of care provided to the population. This can include strategies like decentralized management, public-private partnerships, and new health financing mechanisms. The ultimate goal is to create a more responsive and sustainable health system that can effectively address the evolving health needs of the citizens.

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148. (D) First-level referral unit for a cluster of Primary Health Centres.
In the Indian health system, a Community Health Centre is designed to serve as a first-level referral unit for a cluster of Primary Health Centres. CHCs provide more specialized services, including basic surgery, obstetrics, and pediatrics, which are not typically available at the PHC level. This structure ensures that patients can access more advanced medical care without having to travel directly to a distant district hospital, thereby strengthening the referral chain and improving the overall effectiveness of rural healthcare.

149. (C) Firmly placed women's health, empowerment, and reproductive rights at the center.
The 1994 Cairo International Conference on Population and Development is a landmark event because it successfully shifted the global conversation from population numbers to individual human rights. It placed women's health, empowerment, and reproductive rights at the very center of the population agenda. The conference argued that achieving sustainable development and population stabilization is directly linked to the social and economic empowerment of women, setting a new, rights-based standard for national and international policies around the world.

150. (B) Withdrawal (Coitus interruptus)
Modern family planning methods include a variety of clinical options such as oral pills, intrauterine devices, injectables, and surgical sterilization. These methods are designed to be highly effective and are based on medical and biological principles. In contrast, withdrawal, or coitus interruptus, is considered a traditional method that relies entirely on behavioral control. Traditional methods generally have significantly higher failure rates compared to modern clinical options, making the promotion of modern contraception a key priority for public health programs.

and cost-benefit analysis provide evidence on which programs deliver the best health outcomes for the resources spent. This process ensures that limited public funds are allocated to the most efficient and impactful strategies, ultimately helping to improve the overall performance and sustainability of the national healthcare system.

165. (C) A well-established system of social security and health insurance.
Developed countries are characterized by well-established social security and health insurance systems that provide universal or near-universal coverage for their citizens. This contrasts with many developing nations, where high out-of-pocket expenditures and limited insurance coverage are common challenges. These social protection mechanisms ensure that people can access necessary medical care without facing financial ruin. The presence of such systems is a key structural difference in how healthcare is financed and accessed in nations at different development stages across the globe.

166. (A) 3, 1, 4, 2
The history of global health and development is marked by several landmark events and conferences. The Alma Ata Conference on Primary Health Care occurred in 1978, followed by the Cairo Conference on Population and Development in 1994. The Millennium Development Goals were launched in 2000, setting targets for 2015. Finally, the Sustainable Development Goals were introduced in 2016 to guide global progress until 2030. Understanding this chronological sequence is essential for tracing the evolution of international commitments to health and sustainability.

167. (D) Channelize the energy of the youth for nation-building and personal development.
The primary goal of the National Youth Policy is to channelize the energy and potential of the country's young population toward nation-building and their own personal and professional development. This involves creating opportunities for empowerment, skill development, and active participation in social and economic life. By providing a supportive framework for youth, the policy aims to harness their creativity and dynamism, ensuring that they become productive and responsible citizens who can contribute effectively to the overall progress and stability of the nation.

168. (A) The economic liberalization of the early 1990s and the commitments of the NPP 2000.
The National Health Policy of 2002 was formulated against the backdrop of significant economic liberalization that began in the early 1990s and the demographic commitments outlined in the National Population Policy 2000. This policy reflected the changing economic landscape and aimed to address evolving health challenges through a more integrated and decentralized approach. It emphasized strengthening the public health system while also acknowledging the growing role of the private sector in delivering healthcare services in a more liberalized and modernizing India.

169. (B) 1, 2 and 3 only
India's health and population policies establish specific long-term goals to guide national development. The National Population Policy 2000 targets population stabilization by 2045, and the National Health Policy 2017 aims to increase public health spending to 2.5% of GDP. Additionally, the National Policy on Older Persons was launched in 1999 to address the needs of senior citizens. However, the National Environment Policy is closely linked to public health, recognizing that environmental quality is a major determinant of human well-being and disease prevention.

170. (A) The hierarchy of health facilities from the village level to the national level.
The term "organizational structure" in the context of the Indian health system refers to the hierarchy of medical and health facilities arranged from the village level up to the national level. This includes the network of Sub Centres, Primary Health Centres, Community Health Centres, and District Hospitals, as well as state and central health departments. This structure ensures a graded system of healthcare delivery, facilitating the management of diverse health issues through a clear chain of command and referral.

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practices to improve the overall health and well-being of the population.

158. (D) A significant increase in contraceptive prevalence rate and a reduction in the total fertility rate.
A primary achievement of the family welfare programme in India over the decades has been the significant increase in the contraceptive prevalence rate and a notable reduction in the total fertility rate. While population stabilization remains a long-term goal, these shifts reflect the success of voluntary and integrated health interventions in empowering families to make informed reproductive choices. These improvements have contributed to better maternal and child health outcomes and represent a critical step toward achieving balanced national demographic growth.

159. (A) The expenditure on health by government bodies at the central, state, and local levels.
Public sector spending on health refers to the total expenditure on medical and health-related services by government bodies at the national, state, and local levels. This includes funding for public hospitals, primary health centers, and national disease control programs. Public spending is a critical indicator of a government's commitment to the health of its citizens and is essential for providing equitable access to services and reducing the burden of out-of-pocket expenses for the poor and vulnerable.

160. (B) 8
The United Nations Millennium Development Goals consisted of eight specific goals to be achieved by the year 2015. These goals were designed to address extreme poverty, hunger, disease, and social inequalities on a global scale. Three of the goals focused specifically on health outcomes: reducing child mortality, improving maternal health, and combating HIV/AIDS, malaria, and other diseases. The MDGs provided a unified framework for international development cooperation and successfully mobilized political and financial resources to improve the lives of millions worldwide.

161. (B) Aligning health systems to the unique needs of older persons.
A key element of the WHO Framework for Healthy Ageing is aligning health systems to the specific and often complex needs of older persons. This involves moving away from a disease-centric approach toward one that focuses on maintaining functional ability and providing integrated care. By training healthcare professionals in geriatrics and adapting clinical guidelines for the elderly, systems can better manage chronic conditions and support the well-being of senior citizens, ensuring that healthcare remains responsive and effective throughout the entire aging process.

162. (A) Diarrhoea
The provision of Oral Rehydration Solution and Zinc tablets is a foundational strategy for managing childhood diarrhea in public health programs. Diarrhea remains a leading cause of childhood morbidity and mortality, often resulting in severe dehydration. ORS provides a simple and effective way to restore fluids and electrolytes, while Zinc supplementation helps reduce the duration and severity of the episode. This community-based intervention is essential for preventing dehydration-related deaths and improving overall child survival in resource-limited settings.

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163. (C) It provides formal primary school education from Class 1 to 5.
The ICDS scheme provides supplementary nutrition, health check-ups, and non-formal pre-school education to children under six years old. It acts as a vital community platform for improving maternal and child health through coordination with local healthcare providers. However, the scheme does not provide formal primary school education, which is the responsibility of the education department for children aged six and older. Misunderstanding the scope of the ICDS can lead to incorrect expectations regarding its role in the formal education system.

164. (D) Assist in decision-making by comparing the costs and consequences of different interventions.
Economic evaluation of health programs is a vital tool used to assist policymakers in decision-making by comparing the costs and consequences of different medical and social interventions. Methods like cost-effectiveness

potential need for additional protection measures when STI risk is a concern.

178. (A) Increase in full immunization coverage and reduction in unmet need for family planning.
The success of the RMNCH+A programme can be effectively measured through standardized indicators such as increases in full immunization coverage and reductions in the unmet need for family planning. These metrics reflect improved access to essential health services and the successful implementation of integrated maternal and child health interventions. Achieving these targets is critical for reducing mortality and morbidity, demonstrating that the program's continuum-of-care approach is positively impacting the health status of the target population across different life stages.

179. (C) Changes in the contraceptive prevalence rate and total fertility rate.
Impact assessment of a family planning program focuses on measuring changes in key population outcomes, such as the contraceptive prevalence rate and the total fertility rate. Unlike process evaluations that track activities like meeting counts or material distribution, impact assessments determine whether the program has achieved its ultimate goal of improving reproductive health and stabilizing population growth. These indicators provide the essential evidence needed to evaluate the effectiveness of national population policies and inform future strategies for family welfare interventions.

180. (D) Provide comprehensive primary curative, preventive, and promotive health care.
The Medical Officer at a Primary Health Centre is responsible for providing comprehensive curative, preventive, and promotive healthcare services to the local community. Their role includes managing clinical cases, overseeing maternal and child health programs, and implementing national disease control initiatives. As the leader of the PHC team, the MO ensures that integrated health services are delivered effectively and that the health needs of the population are addressed through both medical treatment and community-wide health education and promotion.

181. (A) Both A and R are true and R is the correct explanation of A.
Decentralization strategies in health are designed to empower Panchayati Raj Institutions by involving them in the management and oversight of local health services. The rationale is that local governments are better positioned to understand the specific needs of their communities, leading to more responsive and accountable service delivery. By bringing decision-making closer to the people, these strategies foster community ownership of health programs and improve the efficiency and transparency of public health systems at the grassroots level.

182. (B) To reduce high out-of-pocket expenditure and protect families from catastrophic costs.
The primary rationale for social health insurance in India is to reduce high out-of-pocket health expenditures and protect families from the catastrophic financial costs often associated with serious illnesses. By pooling health risks and financial resources across a large population, these schemes ensure that individuals can access quality medical care without facing financial ruin. This mechanism is a critical component of achieving universal health coverage, as it makes essential secondary and tertiary healthcare services more affordable and accessible for all citizens.

183. (D) Health issues like pandemics and climate change require global cooperation.
The concept of global health emerged from the recognition that many health challenges, such as pandemics, climate change, and antibiotic resistance, transcend national borders and affect populations worldwide. These issues cannot be solved by any single country alone and require collective global cooperation and partnership. Global health emphasizes the interconnected nature of the modern world and advocates for shared responsibility and coordinated action to address health threats and promote well-being for all individuals regardless of their national boundaries.

184. (A) WHO
The World Health Organization is the primary United Nations agency and the leading international authority on global health. WHO is responsible for coordinating international

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171. (D) A dose of medicine that, once consumed by one person, cannot be consumed by another.
Private goods in health are characterized by being rivalrous and excludable, meaning that one person's consumption prevents another from using the same good and that individuals can be excluded from its benefits if they do not pay. A specific dose of medicine is a classic example of a private good. This contrasts with public goods, like clean air or large-scale mosquito control, which provide collective benefits that everyone can use simultaneously without reducing their availability to others in the community.

172. (B) Bucharest (1974)
The 1974 Bucharest World Population Conference is famously remembered for the debate between development and family planning, where developing nations strongly argued that "development is the best contraceptive." This sentiment highlighted the belief that improvements in economic conditions and social welfare are the most effective drivers for reducing fertility rates. This perspective influenced global policy by emphasizing the importance of an integrated approach that combines socioeconomic progress with health and population services to achieve long-term demographic stabilization and growth.

173. (C) Health manpower planning and the reform of medical education.
The Bajaj Committee focused on the critical issue of health manpower planning and the reform of medical education in India. Its report highlighted the need for training healthcare professionals who are more responsive to the specific health needs of the community, especially in rural areas. The committee's recommendations aimed to address the shortage and maldistribution of health personnel by proposing new strategies for medical training and career management, ensuring that the country has a competent and well-distributed health workforce to serve its population.

174. (D) The National Policy on Older Persons
Policies for special groups are designed to address the unique health, social, and economic needs of specific segments of the population. The National Policy on Older Persons is a prime example, as it focuses exclusively on the well-being of senior citizens. Unlike general national policies like trade or foreign policy, these specialized frameworks provide targeted interventions for groups like the elderly, children, or persons with disabilities, ensuring that their specific rights are protected and their distinct challenges are effectively managed.

175. (A) Centralizing all health financing and decision-making in the capital.
The National Health Mission is based on strategies that promote decentralized planning and implementation rather than centralizing authority. Key components of the mission include infrastructure development, strengthening public health systems, and utilizing public-private partnerships to improve service delivery. By empowering local governments and health facilities to make decisions based on their specific needs, the NHM aims to make healthcare more responsive, efficient, and equitable across diverse regions of the country, ensuring that health services reach every community effectively.

176. (A) 1, 2, and 3 only
Indian health legislation provides essential legal frameworks to address major social and medical issues. This includes the MTP Act, which legalizes abortion under specific conditions, and the PCPNDT Act, which aims to prevent female foeticide by prohibiting sex selection. The COTPA Act also plays a critical role in regulating tobacco products. While these are national acts, their enforcement involves both central and state governments. Importantly, the MTP Act does not allow abortion at any stage for any reason, as it is strictly regulated.

177. (B) They do not offer protection against Sexually Transmitted Infections (STIs).
While Intrauterine Contraceptive Devices are highly effective and long-lasting modern methods for preventing unintended pregnancies, they have a major disadvantage from a public health perspective: they do not offer protection against sexually transmitted infections. Unlike condoms, which provide dual protection, IUCDs only address reproductive goals. This limitation means that individuals using IUCDs may still be at risk for STIs, highlighting the importance of comprehensive sexual health counseling and the

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137. (C) It is generally not reversible, making it unsuitable for those who may want children later.
Permanent family planning methods, such as female or male sterilization, are designed to be a final solution for individuals who have completed their families. The most significant disadvantage is that these procedures are generally not reversible, making them unsuitable for anyone who may desire children in the future. While highly effective, the permanent nature of these methods requires careful counseling to ensure that individuals make a fully informed and voluntary decision based on their long-term reproductive goals.

138. (A) The National Health Mission (2005)
The role of Panchayati Raj Institutions in the health sector was significantly institutionalized and strengthened with the launch of the National Health Mission in 2005. The mission emphasized decentralized planning and management, empowering local governments to participate in the oversight and implementation of health programs. This strategic shift aimed to make health services more responsive to local needs and improve accountability through community monitoring and the active involvement of PRIs in the village-level health planning process.

139. (D) 1, 2, 3 and 4
Policies for aging and disabilities focus on multiple dimensions to improve the well-being of these special groups. This includes ensuring barrier-free access for individuals with disabilities and providing mental health and social support for the elderly. Additionally, financial security through pensions and programs that promote a high quality of life are essential components of these frameworks. Together, these strategies aim to protect the rights of senior citizens and individuals with disabilities, ensuring they can live with dignity and independence.

140. (B) The attainment of a level of health that would permit all people to lead a socially and economically productive life.
The global principle of "Health for All by 2000" emphasized that the main social target for governments and the international community should be the attainment of a level of health that allows all people to lead socially and economically productive lives. This goal was not about the complete eradication of all diseases but about ensuring equitable access to essential health services through primary healthcare. It focused on the social determinants of health and the need for a decentralized, community-based approach.

141. (C) Anemia
Providing free iron and folic acid tablets to pregnant women is a direct and essential public health intervention to combat anemia. This deficiency is a common cause of maternal morbidity and can lead to serious complications during pregnancy and childbirth. By ensuring that pregnant women have access to these vital micronutrients, health programs aim to improve both maternal and neonatal health outcomes. This strategy is a cornerstone of reproductive health care, addressing a widespread nutritional problem across the country.

142. (D) Equity and access
Universal Health Care is primarily a goal related to promoting equity and ensuring access to quality medical services for all citizens. It focuses on removing barriers that prevent people from obtaining necessary care, particularly financial obstacles that can lead to health-related poverty. By prioritizing equitable distribution of resources and services, UHC aims to ensure that healthcare is available to every person based on their need, rather than their socioeconomic status or geographic location within the country.

143. (A) Health Survey and Planning Committee
The Mudaliar Committee, established in 1959 and reporting in 1962, is formally known as the Health Survey and Planning Committee. It was tasked with assessing the performance and progress made in the health sector since the Bhore Committee's foundational report. The committee emphasized the consolidation of existing primary health centers and the strengthening of district hospitals to improve healthcare delivery. Understanding the official names and roles of these committees is essential for tracing the history of health planning in India.

144. (B) To address the health needs of adolescents, including nutrition, sexual health, and mental health.
The addition of the 'Adolescent' component to the RMNCH strategy reflects a growing recognition

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health efforts, setting global health norms and standards, and providing technical support to member nations. Its work includes monitoring health trends, responding to global health emergencies, and advocating for equitable health policies worldwide. By leading collective action on diverse health challenges, WHO plays a vital role in improving public health and promoting healthy lives for all people globally.

185. (C) Managing chronic diseases and the costs of an aging population.
Health policies in developed countries are more likely to focus on the challenges of managing chronic non-communicable diseases and the rising costs associated with an aging population. As life expectancy increases and communicable diseases are largely controlled, health systems must adapt to provide long-term care for conditions like heart disease, diabetes, and dementia. This focus reflects the specific epidemiological and demographic profile of developed nations, requiring specialized medical technology, extensive social protection systems, and long-term financial planning for sustainable healthcare delivery.

186. (A) The integration of medical care, public health, and family planning services.
The Jungalwalla Committee is most recognized for its landmark recommendations on the integration of health services in India. Reporting in 1967, the committee advocated for a unified system that integrates medical care, public health activities, and family planning programs under a common administrative structure. It also recommended a common seniority for all medical officers to improve coordination and efficiency. These recommendations were fundamental in shaping a more cohesive and integrated approach to public health delivery across the country.

187. (D) To provide a comprehensive framework for prevention, care, support, and treatment.
The National Policy on HIV/AIDS is designed to provide a comprehensive and rights-based framework for preventing the spread of the virus and ensuring care, support, and treatment for those affected. It emphasizes awareness campaigns, voluntary counseling and testing, and the provision of life-saving antiretroviral therapy. By focusing on non-discrimination and the protection of individual rights, the policy aims to manage the epidemic effectively while ensuring that patients can lead healthy and productive lives within their communities.

188. (B) P-4, Q-2, R-1, S-3
Public health programs and legislation in India are designed to address the specific needs of various target groups and conditions. Adolescent health focuses on young people aged ten to nineteen, while the Janani Shishu Suraksha Karyakram provides free services for pregnant women and newborns. The National Programme for Health Care of the Elderly targets the health of senior citizens, and the PCPNDT Act is focused on preventing sex-selective abortions. Understanding these relationships is essential for navigating the national healthcare framework and its specialized interventions.

189. (C) Increased fertility
Menopause marks the permanent end of a woman's reproductive cycle, leading to the cessation of menstruation and a natural loss of fertility. It is often accompanied by several health challenges such as hot flashes, mood swings, and a significantly increased risk of osteoporosis due to declining estrogen levels. Because fertility naturally ends with menopause, any suggestion that it results in increased fertility is incorrect. Recognizing these common physiological changes is essential for providing appropriate medical care and supportive counseling for women during this life transition.

190. (D) The degree to which desired health outcomes are achieved.
In the context of health care delivery, effectiveness refers to the degree to which desired health goals or outcomes are successfully achieved in a real-world setting. This principle measures the actual impact of a program or intervention on the health status of a population, such as reducing disease prevalence or increasing survival rates. Evaluating effectiveness is essential for determining which health strategies work best, allowing policymakers to prioritize and invest in programs that consistently deliver positive and sustainable health results.

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191. (A) A significant reduction in the national Infant Mortality Rate (IMR).
A notable achievement of the RMNCH+A programme has been the significant and steady reduction in India's national Infant Mortality Rate. By providing an integrated continuum of care from pregnancy through childhood, the program has improved the coverage of essential health services like institutional delivery and immunization. These improvements reflect the success of focused health interventions in addressing the primary causes of early childhood death, demonstrating the program's vital role in improving overall demographic outcomes and child survival across the country.

192. (A) Both Statement I and Statement II are true.
The development of India's health infrastructure was guided by foundational recommendations from key committees. The Bhore Committee proposed the establishment of Primary Health Units to provide integrated curative and preventive care for rural populations. Subsequently, the Mudaliar Committee emphasized the importance of strengthening district hospitals as specialized referral centers to support the primary health network. Both statements accurately reflect the strategic roles these committees played in conceptualizing and planning a tiered and coordinated public health delivery system for the nation.

193. (B) To act as a health activist and facilitator between community and health system.
The primary role of an Accredited Social Health Activist is to serve as a health activist and a vital facilitator between the local community and the public health system. ASHAs are community health volunteers who mobilize citizens for services like immunization, antenatal check-ups, and institutional deliveries. By providing essential health information and support at the doorstep, they help bridge the gap in healthcare access, particularly in rural areas, and play a critical role in the success of the National Health Mission.

194. (A) Epidemiological Transition
The epidemiological transition refers to a fundamental shift in the patterns of disease and causes of death within a population, moving from predominantly communicable diseases to non-communicable conditions. This transition is typically driven by social and economic development, improvements in healthcare, and changes in lifestyle. As infectious diseases are brought under control, chronic conditions like heart disease, diabetes, and cancer become the primary health challenges, requiring new strategies for long-term management and disease prevention within the health system.

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195. (C) Adolescent health
In the RMNCH+A strategy, the 'A' stands for Adolescent health, reflecting the inclusion of young people aged ten to nineteen in the national continuum-of-care framework. Adolescence is a critical stage for physical and psychological development, with specific health needs related to nutrition, mental health, and reproductive awareness. By focusing on this group, the strategy aims to address issues like nutritional anemia and provide sexual health education, ensuring that adolescents receive the necessary support for a healthy transition into adulthood.

196. (D) Promoting a target-free approach focused on meeting unmet needs for contraception.
A key strategy of the National Population Policy 2000 was the promotion of a target-free approach that prioritized meeting the unmet needs for contraception and health infrastructure. This policy signaled a shift away from rigid demographic targets and coercive measures toward a voluntary and rights-based framework. By focusing on providing high-quality reproductive health services and ensuring informed choice for citizens, the strategy aimed to achieve population stabilization through individual empowerment and the provision of essential services close to the people.

197. (C) Elderly people from lower socioeconomic strata tend to have poorer health outcomes.
Social gradients of health imply that health outcomes for the elderly are systematically linked to their socioeconomic status, with those in lower strata generally experiencing poorer health and higher mortality rates. These disparities arise from inequalities in income, education, and access to quality healthcare throughout their lives. Addressing these gradients requires policies that not only provide medical services but also address the social determinants of

health, ensuring that all senior citizens have the resources and support needed to maintain their well-being.

198. (B) Community participation and appropriate technology.
A core principle of Primary Health Care, as outlined in the Alma Ata Declaration, is community participation and the use of appropriate technology. PHC emphasizes that healthcare should be accessible, affordable, and culturally acceptable, involving the community in the planning and delivery of services. By using technologies that are relevant to local needs and resources, PHC ensures that essential health services are sustainable and effective. This approach moves beyond a narrow medical focus toward a holistic and decentralized model of public health.

199. (D) The sale of tobacco products to minors.
The COTPA Act of 2003 strictly prohibits several activities to control the harmful effects of tobacco, including the sale of tobacco products to minors. This regulation is a critical public health measure designed to prevent tobacco addiction among children and young people. In addition to banning sales to minors, the Act also prohibits smoking in public places and the advertisement of tobacco. These restrictions are essential for protecting overall public health and reducing the long-term burden of tobacco-related diseases in the population.

200. (A) Bhore Committee
The concept of the Sub Health Center in the Indian health system originated from the foundational recommendations made by the Bhore Committee in 1946. The committee envisioned a multi-tiered healthcare structure that provides integrated services starting from the village level. As the most peripheral unit, the Sub Centre was designed to act as the primary point of contact for the community, delivering essential health interventions like maternal care and immunization directly to rural populations, thereby laying the groundwork for India's public health infrastructure.

201. (C) 1, 2 and 3 only
The National Health Mission represents a unified framework for improving healthcare in India, having been launched in 2005 with a primary focus on rural health. It now comprises two sub-missions: the National Rural Health Mission and the National Urban Health Mission. A key component of this mission is the deployment of ASHAs to act as community health facilitators. Crucially, the NHM emphasizes decentralized planning to make health services more responsive to local needs, rather than centralizing all decision-making in the capital.

202. (A) Health systems reform.
A public-private partnership where the government contracts a private entity to build and operate a part of a public hospital is a prime example of health systems reform. These reforms involve introducing structural changes in how healthcare is financed and delivered to improve the performance and capacity of the public health system. By leveraging private sector investment and management expertise, the government aims to enhance the quality and accessibility of specialized medical services while maintaining its role as the primary provider of healthcare.

203. (D) Money paid directly by individuals for health services, not covered by insurance.
In National Health Accounting, out-of-pocket spending refers to the money paid directly by individuals for health services and products that are not covered by any insurance or government program. High levels of out-of-pocket expenditure are a significant challenge in many developing countries, as they can lead to financial distress and poverty for families. Tracking these expenses is essential for policymakers to evaluate the financial protection provided by the health system and design better insurance and social protection mechanisms for the population.

204. (B) An emphasis on empowering women and ensuring their reproductive health and rights.
The Programme of Action from the 1994 Cairo Conference is defined by its emphasis on empowering women and ensuring their reproductive health and human rights. This landmark agreement shifted global population strategies away from a focus on demographic targets toward a rights-based approach. It recognized that improving women's education, health, and social status is the most effective way to achieve sustainable development and

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population stabilization. The Cairo consensus remains the foundational framework for modern reproductive health and population policies around the world today.

205. (A) Both A and R are true and R is the correct explanation of A.
Health systems in many developing countries face a "dual burden" of disease, as they must simultaneously manage a high prevalence of infectious, communicable diseases while addressing the rising incidence of chronic, non-communicable conditions. This dual challenge places a significant strain on limited healthcare resources and infrastructure. Developing effective policies requires a balanced approach that maintains efforts in basic sanitation and immunization while also building capacity for the long-term management of lifestyle-related diseases like heart disease, diabetes, and cancer.

206. (D) Providing universal free housing for all citizens.
The National Health Policy 2017 focuses on strengthening health systems, promoting private sector participation through strategic purchasing, and the promotion of traditional medicine systems like AYUSH. While housing is a critical social determinant of health, providing universal free housing for all citizens falls outside the direct mandate and thematic areas of the health policy itself. The policy aims to improve the overall health status of the population through integrated medical services, financing reforms, and cross-sectoral coordination to address broader health-related environmental factors.

207. (A) Shrivastav Committee
The Shrivastav Committee, reporting in 1975, recommended the creation of a new cadre of semi-professional health workers from within the community, known as Health Assistants. These workers were intended to provide a bridge between the village-level health workers and the medical officers at primary health centers. By advocating for a decentralized, community-based health delivery system and a referral complex, the committee's recommendations significantly influenced the training and management of health personnel and the expansion of rural healthcare services in India.

208. (B) Launching a government-funded health insurance scheme for low-income families.
Launching government-funded health insurance for low-income families is a health system reform specifically aimed at improving equity. By providing financial protection to vulnerable groups, these schemes ensure that individuals can access quality medical care based on their health needs rather than their ability to pay. This intervention reduces health disparities and protects families from the risk of falling into poverty due to high out-of-pocket medical expenses. Improving equity is a foundational goal of public health policies that seek to ensure universal health access.

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209. (B) 1, 2, and 4 only
Family planning methods are categorized into traditional techniques like the rhythm method and modern methods such as pills and intrauterine devices. Modern methods are characterized by significantly higher effectiveness rates in preventing unintended pregnancies compared to traditional ones. Additionally, barrier methods like condoms provide the added benefit of preventing sexually transmitted infections. Permanent methods like sterilization are highly effective but are generally not easily reversible, making them a final choice for those who have completed their desired family size.

210. (A) State Department of Health and Family Welfare.
The organizational structure and delivery of public health services within a state are primarily the responsibility of that state's Department of Health and Family Welfare. While the central government provides national policy guidance and funding, states have the constitutional mandate to manage their own healthcare infrastructure and personnel. This decentralized responsibility allows states to tailor their health systems to address local demographic needs and disease burdens, ensuring that health service delivery is more responsive to the specific requirements of their populations.

211. (C) These factors are major determinants of health but fall under other government departments.
Inter-sectoral coordination for hygiene, water, and sanitation is necessary because these factors are major determinants of health, yet they are

typically managed by departments outside the health sector. Effective public health depends on improvements in these living conditions to prevent the spread of infectious diseases. By collaborating with the responsible agencies, the health sector can address the root causes of many health problems, leading to more comprehensive and sustainable improvements in the overall well-being of the population.

212. (D) A community-wide vaccination program reducing disease transmission for everyone.
A community-wide vaccination program is the best example of a positive externality in health, as it provides protection not only to the individuals who are vaccinated but also to the wider community by reducing overall disease transmission. This collective benefit, known as herd immunity, protects even those who cannot be vaccinated for medical reasons. Recognizing these positive externalities provides a strong public health rationale for government investment in and the universal promotion of vaccination programs to ensure the common good.

213. (C) Universal, applying to all countries, both developed and developing.
The Sustainable Development Goals differ from the earlier Millennium Development Goals because they are universal, meaning they apply to all countries regardless of their development status. While the MDGs primarily focused on challenges in developing nations, the SDGs recognize that issues like health, climate change, and inequality are global problems that require collective action from all nations. This current framework promotes a more integrated and inclusive approach to global development, emphasizing that every country has a role to play in achieving a sustainable future.

214. (B) Access to highly specialized surgical facilities.
Primary Health Care, as defined by the Alma Ata Declaration, includes essential components like health education, nutrition, safe water, and basic sanitation. It focuses on providing accessible and affordable health services at the community level to address the most common health problems. While tertiary care and specialized surgical facilities are important parts of a complete health system, they fall outside the scope of primary care, which prioritizes preventive and promotive services to ensure that health for all is achievable.

215. (D) It functions as a think tank and advisory body, promoting cooperative federalism.
NITI Aayog functions as a premier think tank and advisory body for the Government of India, playing a critical role in promoting cooperative federalism in the health sector. It provides strategic and technical advice to both central and state governments, helping to design and monitor the implementation of national health programs. By facilitating dialogue and collaboration between different levels of government, NITI Aayog ensures that health policies are more integrated and that best practices are shared across states to improve overall health outcomes.

216. (A) Physical health, mental well-being, social relationships, and environment.
The quality of life for an aging population is a multi-dimensional concept that encompasses physical health, mental well-being, social relationships, and the living environment. Ensuring a high quality of life for senior citizens requires policies that address all these aspects, moving beyond a simple medical focus. This includes providing accessible healthcare, mental health support, opportunities for social engagement, and safe, age-friendly environments. By taking a holistic approach, society can support the functional independence and overall well-being of the elderly.

217. (B) P-4, Q-3, R-1, S-2
Key health concepts and programs are specifically designed to address various systemic and epidemiological challenges. Global health emphasizes international cooperation during crises like pandemics, while the epidemiological transition describes the rising burden of chronic diseases. Decentralization in India involves the management of local health services by Panchayats, and social health insurance is exemplified by national schemes like Ayushman Bharat. Together, these frameworks and programs represent the diverse strategies used to improve health outcomes, ensure financial protection, and strengthen healthcare delivery systems globally.

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sustainable workforce for various family welfare programmes.

260. (A) Review the health system and recommend reforms
Expert groups such as the Bhore, Mudaliar, and Shrivastav committees were periodically constituted to perform critical evaluations of India's health infrastructure. Their primary mandate involved reviewing the existing healthcare landscape to identify systemic weaknesses. Based on these assessments, they proposed comprehensive reforms and strategic blueprints that guided the government in establishing a more effective and integrated national health service.

261. (D) The inclusion of adolescent health as a key focus area
The RMNCH+A programme represents a comprehensive expansion of maternal and child health services. The addition of the '+A' specifically highlights the strategic inclusion of adolescent health as a vital component. This recognizes that individuals in this age group face unique biological and social health challenges that require dedicated interventions, ensuring a seamless transition of care throughout the life cycle.

262. (B) A continuum of care approach
The RMNCH+A programme is designed around the principle of providing seamless health interventions across various life stages. This approach, known as the continuum of care, integrates services for reproductive, maternal, newborn, child, and adolescent health. By ensuring that care at one stage supports the next, the strategy aims to improve health outcomes and reduce mortality rates through interconnected service delivery.

263. (C) Immunization and management of diarrhoea
Within the RMNCH+A framework, the child health component focuses on addressing the leading causes of morbidity and mortality among children. Key interventions include systematic immunization schedules and the effective management of common ailments like diarrhoea and acute respiratory infections. These services are essential for safeguarding child survival and ensuring healthy development by preventing and treating preventable conditions in early childhood.

264. (D) Framework for implementing and monitoring interconnected health interventions
The National Health Mission serves as the broad architectural foundation for India's public health efforts. It provides a robust framework for the implementation and monitoring of various interconnected health initiatives. By consolidating rural and urban health systems, the mission ensures that different programmes work synergistically toward holistic improvements in health indicators, offering a centralized platform for coordination and accountability.

265. (A) Care provided during pregnancy, childbirth, and the period after delivery
Maternal health services under the RMNCH+A programme are structured to support women throughout the entire reproductive process. This includes ante-natal care during pregnancy, skilled attendance during childbirth or natal care, and post-natal care following delivery. These interventions are crucial for ensuring the safety of both the mother and the newborn, addressing potential complications and promoting healthy practices during this period.

266. (B) To prohibit sex-selective abortion by regulating diagnostic techniques
The PCPNDT Act was enacted as a specialized legislative measure to address the declining sex ratio in India. Its primary mandate is to prohibit the use of pre-conception and pre-natal diagnostic techniques for the purpose of sex determination. By regulating these technologies and banning the disclosure of the foetus's gender, the act aims to eliminate sex-selective abortion and its consequences.

267. (B) Tobacco control
The Cigarettes and Other Tobacco Products Act of 2003, commonly known as COTPA, serves as a comprehensive legal framework for tobacco control. It aims to protect public health by regulating the trade, commerce, production, and distribution of tobacco products. Through various restrictive measures, the legislation seeks to reduce the prevalence of tobacco use and mitigate the associated health risks within the population.

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to more integrated global policies that combine health services with broader social and economic progress.

225. (B) Health education and promotion.
Teaching mothers how to prepare and use Oral Rehydration Solution at home is a prime example of the health education and promotion component of Primary Health Care. By providing individuals with the knowledge and skills to manage common health problems like childhood diarrhea within the home, public health programs empower communities and reduce the burden on formal medical facilities. This preventive and promotive approach is essential for ensuring that health interventions are sustainable and that individuals can take an active role in maintaining their family's well-being.

226. (A) It has consistently relied on coercive methods since its inception in 1952.
India's Family Welfare Programme was the first national program of its kind in the world and has evolved from a narrow focus on population control to a broader, voluntary health and welfare approach. While there was a temporary period of coercion during the Emergency, the program has consistently emphasized voluntary participation and individual choice throughout most of its history. Any suggestion that it has relied on coercive methods since its inception is an incorrect representation of its long-term development and the current rights-based national strategy.

227. (C) Equity
The introduction of user fees at public hospitals is a health system reform that can have a negative impact on the principle of equity. While fees might be intended to improve efficiency or generate revenue, they can create financial barriers that prevent the poor and vulnerable from accessing necessary medical services. This can lead to health disparities, as those unable to pay may delay or forgo treatment. Protecting equity in health systems requires ensuring that financial barriers do not impede access to healthcare for those who need it most.

228. (D) They often have universal health coverage through various insurance mechanisms.
Health systems in developed countries are most accurately described by their provision of universal or near-universal health coverage through various social insurance or tax-funded mechanisms. These established systems ensure that citizens can access high-quality medical services without facing significant financial hardship. While these nations face challenges such as rising technology costs and an aging population, their robust social protection frameworks represent a fundamental difference from the resource-constrained and high out-of-pocket health systems often found in many developing countries across the world today.

229. (C) Focused on common, diagnosable, and manageable medical conditions in both genders.
Government health programs for infertility typically focus on common, diagnosable, and manageable medical conditions that affect both men and women. This approach aims to provide basic diagnostic and treatment services at the secondary level of the public health system, making infertility care more accessible and reducing the reliance on expensive private clinics. By addressing treatable causes, these programs provide essential support to couples facing social stigma and personal distress, reflecting an integrated and equitable approach to reproductive healthcare services.

230. (B) Management of geriatric health problems
The RMNCH+A programme is a comprehensive continuum-of-care framework that addresses the health needs of individuals across several life stages: reproductive, maternal, newborn, child health, and adolescence. It includes services like antenatal care, immunization, and family planning. However, the management of geriatric health problems for the elderly falls outside the scope of this specific program, as it is addressed through the dedicated National Programme for Health Care of the Elderly. Understanding these program boundaries is essential for the effective management of specialized health services.

231. (D) A person's level of education and income.
Social determinants of health are the conditions in which people are born, grow, live, work, and age that significantly impact their health

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Health Accounts inform better decisions on resource management and help design policies that improve financial protection for the entire population.

245. (C) Improving maternal health.
The fifth Millennium Development Goal was specifically dedicated to improving maternal health, with targets focused on reducing the maternal mortality ratio and achieving universal access to reproductive health services. This goal recognized that maternal health is a critical indicator of the overall performance of a health system and a key component of sustainable development. By focusing global attention and resources on maternal care, MDG 5 successfully mobilized efforts to improve institutional delivery and access to family planning in many developing nations.

246. (B) A common seniority for all cadres (central, state, specialist, and generalist).
The Jungalwalla Committee, reporting in 1967, made the landmark recommendation of a common seniority for all medical cadres to improve the integration and management of health services in India. This proposal aimed to unify the health workforce across central, state, specialist, and generalist roles, fostering better coordination and career progression. By advocating for an integrated administrative structure, the committee sought to eliminate silos between different programs, ultimately leading to a more efficient and effective national health delivery system for the country.

247. (A) Both Statement I and Statement II are true.
The National Health Policy 2017 aims to achieve Universal Health Coverage by ensuring that every citizen has access to quality health services without facing financial distress. A key strategy for reaching this goal is the simultaneous strengthening of the public health sector and the "strategic purchasing" of essential services from the private sector. Both statements accurately reflect the policy's integrated approach to leveraging all available health resources and improving system performance to provide comprehensive and affordable care to the entire population.

248. (A) Nutritional anemia and mental health issues.
The adolescent health component of the RMNCH+A programme specifically targets age-related health problems such as nutritional anemia and mental health issues. Adolescence is a critical period for physical growth and emotional development, making these interventions vital for long-term well-being. By addressing iron deficiencies and providing psychological support, the program aims to ensure a healthy transition into adulthood. This focused approach reflects a broader recognition of the specific health challenges faced by young people aged ten to nineteen in modern society.

249. (C) Contributions should be based on ability to pay, while benefits are based on need.
Equity in healthcare financing is the principle that individual financial contributions to the health system should be based on their ability to pay, while the medical benefits they receive should be determined by their specific health needs. This approach ensures that the poor and vulnerable are not excluded from necessary care due to financial barriers. By prioritizing need over wealth, equity-focused financing aims to reduce health disparities and promote social justice, ensuring that quality healthcare is a right accessible to all.

250. (A) More comprehensive, integrated, and universally applicable to all countries.
The shift from the Millennium Development Goals to the Sustainable Development Goals represents a significant move toward a development agenda that is more comprehensive, integrated, and universally applicable to all countries. Unlike the MDGs, which focused primarily on developing nations, the SDGs recognize that challenges like health, equality, and environmental sustainability are global and require action from every nation. This current framework promotes a holistic approach, emphasizing the interconnected nature of social, economic, and environmental goals for a sustainable and equitable future.

251. (B) The National Population Policy of 2000
The National Population Policy formulated in 2000 represents a sophisticated evolution of India's earlier demographic strategies. It significantly expanded upon the preliminary frameworks established by the 1977 policy. By

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238. (D) Drastic reduction in the national Total Fertility Rate (TFR).
One of the most significant achievements of India's family welfare programme over several decades has been the drastic reduction in the national Total Fertility Rate. While population stabilization is a long-term target, this steady decline reflects the success of voluntary health interventions in increasing contraceptive use and empowering families to make informed reproductive choices. This demographic shift has contributed to better maternal and child health and represents a critical milestone in India's transition toward a more balanced and sustainable population growth pattern.

239. (A) An integrated, life-cycle approach to health.
The RMNCH+A programme represents an integrated, life-cycle approach to healthcare, providing a continuous spectrum of services from pregnancy and birth through childhood and into adolescence. This framework ensures that essential health interventions are linked across different stages of life, addressing the specific needs of individuals at each critical point. By taking this holistic perspective, the strategy aims to improve overall health outcomes, reduce mortality rates, and break the intergenerational cycle of poor health and nutritional status within the population.

240. (B) They are 'fit and forget' methods with high effectiveness over several years.
Long-acting reversible contraceptives, such as IUDs, offer a major advantage as "fit and forget" methods that provide highly effective protection against unintended pregnancies for several years. Unlike daily pills or behavioral techniques, LARCs do not require constant user action or regular visits to a health facility once they are in place. This high effectiveness and convenience make them a critical component of family planning programs, as they significantly reduce the risk of user error and provide reliable long-term reproductive control.

241. (B) Calculating the number of media articles written about the programme.
Methods of impact assessment for a health programme focus on measuring actual health outcomes through analyzing standardized health indicators, conducting surveys on knowledge and behavior, and comparing results with defined control groups. These scientific approaches provide evidence on whether a program has achieved its ultimate goal of improving public health. In contrast, simply calculating the number of media articles written about a program is a measure of publicity rather than a rigorous assessment of its medical or social impact on the population.

242. (A) The District Collector and the Chief Medical and Health Officer.
The responsibility for implementing the family welfare programme at the district level lies with the District Collector and the Chief Medical and Health Officer. This leadership team coordinates the efforts of various health departments, oversees the management of health facilities, and ensures that national and state policies are effectively translated into local actions. By providing administrative and medical supervision, they play a vital role in managing resources, monitoring performance, and achieving demographic and health targets within their specific geographic jurisdiction.

243. (D) 1, 2, 3, and 4
The effective functioning of India's health system relies on the coordinated roles of various institutions and strategies. Panchayati Raj Institutions provide local monitoring, while the ICDS and health sector work together to address malnutrition. Health system reforms often include the promotion of public-private partnerships to improve service delivery and infrastructure. Additionally, NITI Aayog serves as a critical policy think tank, providing strategic advice to guide national health planning. Together, these elements ensure that health services are integrated, responsive, and sustainably managed.

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244. (D) Understand how money for health is raised, pooled, and used.
The need for National Health Accounting arises from the fundamental requirement to understand exactly how money for health is raised, pooled, and ultimately used within a country's health system. This systematic tracking of financial flows provides policymakers with essential data on the efficiency, equity, and sustainability of health spending. By analyzing where resources are allocated and who benefits from them, National

outcomes. A person's level of education and income are prime examples of these determinants, as they influence access to quality nutrition, housing, and healthcare services. The National Health Policy 2017 recognizes that addressing these social factors through inter-sectoral action is essential for improving public health and achieving universal health coverage, as medical interventions alone cannot solve all health challenges.

232. (A) Both A and R are true and R is the correct explanation of A.
The Bhore Committee's report of 1946 is a seminal document in Indian public health history because it provided the first comprehensive blueprint for the organization of health services in independent India. The committee emphasized the vital importance of integrating preventive and curative services and proposed a three-tier system of healthcare delivery. By focusing on primary health centers and community-wide medical attention, the report established the foundational principles that guided the development of the nation's public health infrastructure and service delivery for decades.

233. (C) Coordination with health sector for immunization and check-ups at the Anganwadi.
The ICDS scheme's contribution to health is primarily achieved through close coordination with the formal health sector, using Anganwadi centers as platforms for immunization and regular health check-ups. This collaboration ensures that vulnerable groups, such as children and nursing mothers, have easy access to essential preventive health services within their own communities. By integrating nutrition and health facilitation, the ICDS scheme plays a vital role in improving maternal and child health outcomes and addressing the multiple determinants of proper child development.

234. (A) Maintaining functional ability to ensure well-being in older age.
Healthy Ageing, as promoted by the WHO framework, focuses on maintaining the functional ability that enables individuals to lead a well-being-centered life during older age. This approach shifts the focus from the simple absence of disease to the preservation of physical and mental capacities, supported by age-friendly environments. By emphasizing functional independence, the framework aims to ensure that senior citizens can continue to do what they value, promoting a higher quality of life and social participation throughout the entire aging process.

235. (D) The overall reason for the policy's existence and the problem it seeks to address.
In the context of health policies, the purpose refers to the fundamental reason for the policy's existence and the specific public health problem it is designed to address. Clearly defining the purpose is essential for providing direction and rationale for all subsequent goals, strategies, and interventions. It serves as the foundation for the entire policy framework, ensuring that all programmatic efforts are aligned toward solving the primary challenge identified by policymakers and meeting the health needs of the target population.

236. (B) Jungalwalla Committee
The Jungalwalla Committee was specifically tasked with reviewing the problem of having separate, vertical health programs for different diseases and recommended the integration of health services. Reporting in 1967, the committee emphasized that unified service delivery would improve efficiency and coordination. By advocating for the integration of medical care, public health, and family planning programs, the committee laid the groundwork for a more cohesive national health system, moving away from fragmented programmatic approaches toward a more integrated model of healthcare.

237. (C) Tailored to the specific demographic and social context of the state.
A key feature of population policies at the state level is their ability to be tailored to the specific demographic and social context of each individual state. Because demographic profiles and health challenges vary significantly across India, states have the flexibility to design policies that address their unique needs. This decentralized approach allows for more targeted interventions and resource allocation, ensuring that population strategies are more relevant, culturally acceptable, and effective in achieving both state-level and national demographic goals for sustainable growth.

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refining objectives and broadening the scope of population control, this policy set comprehensive, long-term goals for achieving population stabilization through multifaceted health and development interventions across the country.

252. (A) Achieving universal health coverage and affordable care
The National Health Policy introduced in 2017 outlines a transformative vision for India's healthcare system. Its primary focus is the attainment of universal health coverage, ensuring every citizen has access to quality services. By prioritizing the delivery of affordable and equitable healthcare, the policy seeks to minimize financial barriers while improving health outcomes through an integrated network of facilities.

253. (C) Specialized policies targeting specific demographic groups
India's public health framework incorporates tailored strategies to address the distinct needs of various population segments. The National Youth Policy and the National Policy on Older Persons serve as prime examples of these specialized initiatives. These frameworks focus on unique demographic challenges, providing targeted objectives and strategies that complement broader health policies to ensure comprehensive social and health protection.

254. (D) A dynamic and responsive process to evolving challenges
The historical development of health and population policies in India demonstrates a proactive approach to changing societal needs. Rather than remaining stagnant, these frameworks have evolved into a dynamic system that responds to emerging demographic shifts and public health crises. This progression reflects a continuous effort to refine strategies and address multifaceted challenges through updated and comprehensive national guidelines.

255. (C) To establish a comprehensive primary healthcare network
The National Health Policy of 1983 was a landmark initiative that laid the foundation for modern healthcare delivery in India. Its central objective was the creation of a vast and comprehensive network of primary healthcare facilities. This strategic move aimed to make essential medical services accessible to the entire population, focusing on preventive and curative care at the grassroots level.

256. (B) The Kartar Singh Committee
The Kartar Singh Committee proposed a fundamental shift in the structure of the health workforce. It advocated for the replacement of unipurpose workers with a new cadre known as multipurpose health workers. This reform aimed to enhance efficiency by training personnel to deliver a variety of services, including family planning and basic health interventions, through a more integrated service model.

257. (D) The Chadha Committee
The Chadha Committee played a crucial role in shaping integrated health strategies. It specifically focused on combining malaria eradication efforts with family planning services. To achieve this integration, the committee introduced the concept of the multipurpose worker. This approach ensured that field-level staff could simultaneously address infectious disease control and reproductive health needs within communities, optimizing the public health infrastructure.

258. (A) The evolution of health services and population strategies in Five Year Plans
Recommendations from various expert committees have been instrumental in directing India's developmental path. These expert insights significantly influenced how health services and population control strategies were formulated within the framework of successive Five Year Plans. By reviewing existing systems, these committees ensured that national planning reflected evolving public health priorities and facilitated the continuous improvement of health service delivery structures.

259. (C) The Bajaj Committee
The Bajaj Committee was established to address specific gaps in the human resources aspect of the healthcare system. It focused heavily on health manpower planning and medical education. By analyzing the requirements for trained professionals, the committee provided essential recommendations to align education and staffing with the country's health needs, ensuring a

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218. (A) The backlash against coercive family planning measures during the Emergency.
The National Population Policy of 1977 was a direct response to the strong public backlash against the coercive family planning measures that were implemented during the period of Emergency in India. This policy marked a significant turning point by emphasizing the purely voluntary nature of the program and renaming it the Family Welfare Programme. By prioritizing individual choice and welfare over rigid demographic targets, the 1977 policy aimed to rebuild public trust and ensure that family planning remained a voluntary health intervention.

219. (D) To encourage families to take care of their older members and strengthen intergenerational bonds.
A key objective of the National Policy on Older Persons is to encourage families to care for their elderly relatives and to strengthen the intergenerational bonds that have traditionally provided social support. The policy recognizes that the family is the primary and most important support system for senior citizens. By providing incentives and community-based services that assist families in caregiving, the policy aims to ensure that the elderly can remain integrated within their homes and communities, enjoying a dignified and supported life.

220. (B) The declining child sex ratio due to sex-selective abortion.
The primary health and social concern addressed by the PCPNDT Act is the declining child sex ratio in India, which is driven by the misuse of prenatal diagnostic techniques for sex-selective abortion. This legislation prohibits the disclosure of the fetus's sex and regulates the use of diagnostic tools to prevent female foeticide. By curbing these unethical practices, the Act serves as a vital legal mechanism for protecting the rights of the girl child and promoting gender equality and social balance within the country.

221. (D) 1, 2, 3, 4, and 5
India's population and health programs have undergone several strategic shifts to improve service delivery and demographic outcomes. These include introducing cash incentives like JSY to promote institutional delivery and creating a cadre of multipurpose health workers for unified grassroots care. The move to a target-free approach and the identification of primary healthcare as the key to health for all were other pivotal changes. Additionally, the modern focus on women's empowerment and reproductive rights reflects a broader, more integrated approach to improving national health.

222. (D) Community Health Centre (CHC)
The Community Health Centre is the tier of India's rural health infrastructure designed to provide specialized medical services, including surgery, obstetrics and gynecology, pediatrics, and medicine. Serving as a referral unit for four Primary Health Centres, the CHC is staffed by specialist doctors and equipped with more advanced diagnostic and inpatient facilities. This structure ensures that citizens in rural areas have access to specialized care closer to their homes, reducing the need for travel to more distant district-level hospitals.

223. (A) Non-excludable and non-rivalrous in consumption.
In public health financing, the key distinction between public and private goods is that public goods are non-excludable and non-rivalrous. This means that everyone can benefit from the good, such as a large-scale mosquito control program, without one person's benefit reducing its availability to others. Because private market transactions cannot efficiently provide such goods, they are typically funded by the government through taxes. Ensuring the provision of public goods is essential for protecting the health of the entire community and addressing broad health threats.

224. (B) Developed and developing countries on family planning versus development priorities.
The 1974 Bucharest World Population Conference is iconic for the debate between developed and developing nations over whether family planning or socioeconomic development should be the priority for reducing fertility. Developing countries famously argued that "development is the best contraceptive," emphasizing that improving living standards would naturally lead to lower population growth. This debate highlighted the complex relationship between demography and development and ultimately led

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268. (A) Using a combination of legislative action and programmatic support
India's strategy for addressing complex public health challenges like sex selection and tobacco consumption is multidimensional. It employs a two-pronged approach that integrates strict legislative regulations with supportive health programmes. While laws provide the necessary legal boundaries and penalties, associated programmes offer the services, information, and education needed to achieve long-term behavioral changes and improve overall public health outcomes across communities.

269. (C) The Medical Termination of Pregnancy (MTP) Act
The Medical Termination of Pregnancy Act provides the legal framework for the safe and regulated performance of abortions in India. This legislation outlines the specific conditions and circumstances under which a pregnancy can be legally terminated by registered medical practitioners. By establishing these guidelines, the act seeks to protect women's health and ensure access to safe reproductive services within the legal system.

270. (D) The COTPA Act-2003
The COTPA Act of 2003 incorporates several strategic measures designed to reduce the social acceptability and consumption of tobacco. These include the strict prohibition of smoking in public places and a total ban on the advertising of tobacco products. Additionally, the act mandates the use of pictorial warnings on packaging to inform consumers about health risks, representing a comprehensive public health intervention.

271. (C) Child Health
Public health initiatives for children are designed to target the most common and severe threats to their survival. Management of conditions like diarrhoea and acute respiratory infections is a central component of these child health services. By focusing on these specific illnesses, which are leading causes of childhood morbidity, the programmes aim to significantly reduce mortality rates and improve health outcomes.

272. (B) A continuum of care including ante-natal, natal, and post-natal phases
The approach to maternal health in India is characterized by a comprehensive continuum of care. This model ensures that women receive medical attention and support during the ante-natal, natal, and post-natal periods. By providing continuous services from the start of pregnancy through childbirth and the subsequent recovery phase, the health system aims to safeguard the well-being of both mothers and newborns.

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273. (D) Providing treatment options within government programmes
Infertility is recognized as a significant health and social issue within India's public health landscape. Government programmes address this challenge by offering medical treatment options to affected individuals. Beyond clinical interventions, these initiatives also aim to manage the socio-psychological impacts associated with infertility, ensuring that care is accessible and that the broader consequences on well-being are addressed within the public system.

274. (A) Treatment for sports-related injuries
India's public health programmes are structured to cover various stages of the life cycle, focusing on maternal, child, adolescent, and reproductive health. While they address specific issues such as vitamin deficiencies in children, menopausal health in women, and the management of infectious diseases like HIV/AIDS, they do not traditionally include specialized treatment for sports-related injuries as a core component of these specific frameworks.

275. (C) A choice is offered between traditional and modern methods with varying attributes
Family planning services in the public health sector emphasize the importance of informed choice and accessibility. These programmes provide a variety of contraceptive options, ranging from traditional methods to modern scientific ones. Each method possesses unique characteristics regarding effectiveness, convenience, and health impacts. By offering this range of choices, the health system enables individuals to select the most suitable method for their needs.

(A) Systematic random sampling
(B) Cluster sampling
(C) Stratified random sampling
(D) Simple random sampling

42. A researcher selects every 10th person from a list of all students in a university. This is an example of which sampling method?
(A) Systematic random sampling
(B) Stratified random sampling
(C) Simple random sampling
(D) Cluster sampling

43. Consider the following statements describing various sampling methods:
I. In cluster sampling, the population is divided into groups, and a random sample of these groups is selected.
II. Purposive sampling involves selecting subjects based on the researcher's judgment.
III. Multi-stage sampling combines several sampling techniques.
IV. Simple random sampling is always the most cost-effective method.
V. The 'design effect' quantifies how much the standard error in a complex sample differs from a simple random sample.
Which of the above statements are correct?
(A) I, II, and IV only
(B) III, IV, and V only
(C) I, II, III, and V only
(D) All I, II, III, IV, and V

44. Which sampling technique involves selecting samples in multiple stages, often starting with large geographical areas and narrowing down to individual households?
(A) Purposive sampling
(B) Multi-stage sampling
(C) Simple random sampling
(D) Systematic random sampling

45. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R):
Assertion (A): Stratified random sampling often results in a more representative sample and smaller sampling error compared to simple random sampling of the same size.
Reason (R): By ensuring all strata are represented in the sample, it reduces variability within the sample that could arise from randomly over- or under-sampling certain subgroups.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

46. What is the 'design effect' in sampling?
(A) The visual aesthetic layout of the standardized research questionnaire.
(B) The impact of the research objective on selecting a sampling method.
(C) A procedural error made during the design phase of the research study.
(D) A measure of how sampling design affects precision relative to SRS.

47. The first step in the research process is typically:
(A) Defining the research problem.
(B) Collecting data.
(C) Formulating a hypothesis.
(D) Writing the research report.

48. Which of the following is NOT a necessary component of a well-defined research problem?
(A) A clear statement of the variables or concepts of interest.
(B) A detailed plan for data analysis.
(C) An indication of the population or universe to be studied.
(D) A specification of the scope and boundaries of the research.

49. A research hypothesis is best described as:
(A) A proven fact that forms the basis of the research.
(B) A testable statement that proposes a possible relationship between variables.
(C) The final conclusion drawn from the research findings.
(D) A summary of the existing literature on the topic.

50. Match the sections of a research report in List I with their corresponding content in List II:
List I:
P. Introduction,
Q. Literature Review,
R. Methodology,

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can significantly reduce the burden of disease and improve community well-being.

285. (C) Strategies for health system reform like decentralization and collaboration
Modern health reforms in India focus on improving the delivery and effectiveness of services through innovative structural changes. These strategies emphasize the decentralization of management to local levels and the promotion of multi-sectoral collaboration. By involving local governments and the private sector, and coordinating with other departments, these reforms aim to create a more integrated, efficient, and responsive health system for the population.

286. (D) To pool risk and protect individuals from catastrophic health expenditure
Social Health Insurance schemes serve as a critical financial protection mechanism in the healthcare sector. Their primary function is to pool health risks and financial resources across a large population. This collective approach helps shield individuals and families from catastrophic medical expenses that could otherwise lead to poverty. By distributing the costs, these schemes ensure that healthcare remains accessible during serious illnesses.

287. (C) An externality
In health economics, an externality occurs when an individual's health action provides unintended benefits or costs to others. A classic example is vaccination, where one person's immunity helps prevent the spread of disease to the entire community. This positive externality demonstrates why certain health interventions are valuable beyond the individual level, justifying public investment to maximize these wider social and health benefits.

288. (B) Efficiency
Efficiency is a fundamental economic principle used to evaluate healthcare delivery systems. It specifically refers to the ability to maximize health outcomes and service quality using the available resources. In a resource-constrained environment, maintaining high efficiency ensures that investments in the health sector produce the greatest possible benefit for the population, preventing waste and optimizing the performance of various health programmes.

289. (D) Non-excludable and non-rivalrous
Public goods in the health sector possess two defining economic characteristics: they are non-excludable and non-rivalrous. This means that individuals cannot be easily prevented from benefiting from them, and one person's use does not reduce the amount available to others. Services like disease surveillance are typical public goods, as they protect the entire population and generally require government funding for effective implementation.

290. (A) To systematically track financial flows within the health sector
National Health Accounting is an essential tool for health policy and planning. It provides a systematic framework for tracking all financial flows within the health system. By documenting where funds originate and how they are spent across various services and providers, it enables policymakers to assess the efficiency and equity of health spending, ultimately guiding more effective resource allocation and investment.

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291. (C) The Alma-Ata Declaration
The 1978 Alma-Ata Declaration was a transformative moment in global health history. It famously championed the ambitious goal of achieving "Health for all by 2000." To reach this target, the declaration identified Primary Health Care as the essential strategy. It outlined the core components of this approach, emphasizing community participation, accessibility, and the integration of basic health services into the community.

292. (A) Infectious diseases to chronic non-communicable diseases
The epidemiological transition describes a significant shift in the dominant patterns of disease within a population. As countries develop and public health improves, there is a typical movement away from high rates of infectious and communicable diseases. These are gradually replaced by a higher prevalence of chronic non-communicable diseases, such as heart disease and diabetes, necessitating a major reorientation of health systems.

293. (D) The United Nations Population Fund (UNFPA)
The United Nations Population Fund is a specialized agency of the UN that plays a vital role in global health. It focuses specifically on reproductive and maternal health, as well as population dynamics. By providing technical assistance and funding, UNFPA helps countries implement policies that support reproductive rights and sustainable development, working alongside other international organizations to address complex population challenges.

294. (B) Shaping global consensus on population issues
The UN World Population Conferences held in Bucharest, Mexico City, and Cairo were instrumental in developing a shared international perspective. These gatherings brought together nations to discuss and negotiate complex demographic challenges. The resulting declarations helped shape a global consensus on how to balance population growth with economic development and human rights, providing a unified framework for national policies around the world.

295. (C) Require collaborative action that transcends national boundaries
The concept of global health recognizes that many health challenges are not confined to a single country. Issues such as pandemics, climate change, and demographic shifts require collaborative action that transcends national borders. This approach emphasizes that international cooperation and the sharing of resources and knowledge are essential for effectively addressing health problems that affect the well-being of the entire global population.

296. (D) More comprehensive and universal in scope
The transition from the Millennium Development Goals to the Sustainable Development Goals marked a significant shift in the global development agenda. While the MDGs were focused on specific targets for developing nations, the SDGs are designed to be more comprehensive and universal. They encompass a broader range of interconnected social, economic, and environmental goals that apply to all countries, regardless of development status.

297. (A) To ensure healthy lives and promote well-being for all at all ages
SDG 3 is a central pillar of the Sustainable Development Goals, specifically dedicated to the health and well-being of the global population. Its overarching aim is to ensure healthy lives and promote well-being for all individuals across all age groups. This ambitious goal includes a wide variety of targets, such as reducing maternal mortality, ending epidemics, and achieving universal health coverage.

298. (B) Adapt health and social systems for an ageing population
The WHO Framework for Healthy Ageing provides critical guidance for nations facing the demographic challenge of an ageing population. Its primary purpose is to help countries adapt their health and social systems to meet the specific needs of older persons. By focusing on functional ability and well-being, the framework encourages policies that support elderly citizens in living healthy, active, and meaningful lives.

299. (B) Reducing child mortality and improving maternal health
The Millennium Development Goals established a set of clear, time-bound targets to address global poverty and health between 2000 and 2015. Several of these goals were directly focused on critical health indicators. These included specific targets for reducing mortality rates among children under five and improving maternal health outcomes, which were viewed as essential milestones for achieving broader social and economic development.

300. (A) An expansion and deepening of global development commitments
The evolution from the MDGs to the SDGs reflects a significant expansion and deepening of the global community's commitment to development. While the MDGs laid the groundwork by focusing on essential human needs, the SDGs represent a more sophisticated and integrated approach. They address a wider range of health challenges and recognize the complex interconnections between health, environment, and social equity.

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CHAPTER 10

Research Methodology and Programme Evaluation

1. Which of the following best defines the 'conceptual framework' of scientific research?
(A) The systematic process of collecting numerical data for statistical analysis.
(B) The system of concepts and theories that supports a research study.
(C) The formal report submitted after the successful completion of a project.
(D) The specialized tools and technical instruments used for data collection.

2. In the context of social science research, 'empirical research' is primarily based on:
(A) Observation, experience, and verifiable evidence.
(B) Philosophical arguments and logical reasoning.
(C) Review of existing literature and secondary data.
(D) The subjective opinions of the researcher.

3. Consider the following two statements regarding types of research:
Statement I: Action research is primarily aimed at solving an immediate, specific, and practical problem.
Statement II: Operations research uses mathematical and statistical modeling to improve decision-making in organizational systems.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

4. Which type of research is conducted to assess and improve the design and implementation of a new programme before it is fully rolled out?
(A) Summative research
(B) Operations research
(C) Concurrent research
(D) Formative research

5. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R):
Assertion (A): Programme evaluation research is crucial for determining the effectiveness and efficiency of social interventions.
Reason (R): It systematically assesses whether a programme has achieved its intended outcomes and impacts.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

6. A research study that describes the characteristics of a population or phenomenon without manipulating any variables is best classified as:
(A) A True Experimental Study
(B) A Descriptive Study
(C) A Quasi-Experimental Study
(D) A Panel Study

7. Which of the following is an INCORRECT statement about observational studies?
(A) They include both descriptive and exploratory study designs.
(B) They are often used when experimental methods are unethical or impractical.
(C) They aim to observe phenomena in their natural setting.
(D) The researcher actively manipulates the independent variable.

8. Match the items in List I with those in List II regarding types of research studies:
List I: (Study Type)

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the following is a key characteristic of a normal distribution?
(A) The mean, median, and mode are all equal.
(B) It is skewed to the right.
(C) It has two distinct peaks.
(D) The distribution is rectangular.

25. Consider the following statements about probability distributions:
I. The Binomial distribution is a discrete probability distribution.
II. The Exponential distribution is often used to model the time until an event occurs.
III. The Normal distribution is completely defined by its mean and standard deviation.
IV. In a Normal distribution, approximately 95% of the data falls within one standard deviation of the mean.
Which of the above statements are correct?
(A) I and II only
(B) I, II, and III only
(C) III and IV only
(D) All I, II, III, IV, and V

26. What does a 'statistical hypothesis' represent?
(A) An assumption or a statement about a population parameter, which may or may not be true.
(B) A conclusive fact about a population.
(C) The final result of a research study.
(D) The research question itself.

27. The concept of 'correlation' in statistics is used to:
(A) Prove that one variable causes another variable to change.
(B) Predict the value of a dependent variable based on a categorical independent variable.
(C) Compare the means of two different groups.
(D) Measure the strength and direction of the linear relationship between two variables.

28. Consider the following statements related to statistical analysis:
I. A p-value of 0.03 indicates that there is a 3% chance that the null hypothesis is true.
II. A confidence interval provides a range of plausible values for a population parameter.
III. Logistic regression is used when the dependent variable is continuous.
IV. 'Association' is a broader concept than 'correlation' and can apply to categorical variables.
V. A p-value less than the level of significance (e.g., 0.05) leads to the rejection of the null hypothesis.
Which of the above statements are correct?
(A) I, II, and III only
(B) II, IV, and V only
(C) I, III, and IV only
(D) All I, II, III, IV, and V

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29. What is the 'level of significance' (p-value) in hypothesis testing?
(A) The probability of correctly accepting the null hypothesis.
(B) The probability of making a Type II error.
(C) The probability of observing a result as extreme as, or more extreme than, the one observed, if the null hypothesis is true.
(D) The range within which the true population parameter is expected to lie.

30. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R):
Assertion (A): Logistic regression is a preferred method for analysis when the outcome variable is binary.
Reason (R): Logistic regression models the probability of the outcome occurring and provides odds ratios, which are easily interpretable for categorical predictors.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

31. A 95% Confidence Interval for a mean suggests that:
(A) 95% of similarly constructed intervals will contain the true mean.
(B) There is a 95% probability that the true mean is in this interval.
(C) The sample mean falls within this specific interval 95% of the time.
(D) Exactly 95% of the population data points fall within this interval.

16. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R):
Assertion (A): The quality of data is a paramount concern in evaluation research.
Reason (R): The conclusions about a programme's success or failure are directly dependent on the accuracy and reliability of the data collected.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

17. In the context of data analysis, which measure compares the odds of an event occurring in one group to the odds of it occurring in another group?
(A) Relative Risk
(B) Odds Ratio
(C) P-value
(D) Confidence Interval

18. Arrange the following steps of conducting a typical social science research project in the correct chronological order:
I. Data analysis and interpretation,
II. Formulation of research hypotheses,
III. Data collection,
IV. Defining the research problem,
V. Research report writing.
(A) IV, II, III, I, V
(B) II, IV, III, V, I
(C) IV, III, II, I, V
(D) I, II, IV, III, V

19. Relative Risk (RR) is calculated as:
(A) The ratio of the odds of an event in the exposed group to the odds in the unexposed group.
(B) The probability of an event occurring.
(C) The ratio of the probability of an event occurring in an exposed group to the probability of the event occurring in a non-exposed group.
(D) The difference in risk between the exposed and unexposed groups.

20. Match the statistical concepts in List I with their descriptions in List II:
List I:
P. p-value,
Q. Confidence Interval,
R. Correlation,
S. Logistic Regression.
List II:
1. Population parameter range,
2. Binary outcome model,
3. Linear relationship strength,
4. Null hypothesis probability.
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-1, R-3, S-2
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-1, R-4, S-2

21. What is the fundamental concept behind the application of probability in the analysis of population data?
(A) To prove a scientific hypothesis with absolute and total mathematical certainty.
(B) To describe sample characteristics without any reference to the population.
(C) To quantify uncertainty when making population inferences from samples.
(D) To eliminate all potential sources of human error in data collection.

22. Bayes' Theorem is a mathematical formula used for:
(A) Calculating the mean of a population.
(B) Updating the probability of a hypothesis based on new evidence.
(C) Determining the sample size required for a study.
(D) Measuring the correlation between two continuous variables.

23. Which probability distribution is most suitable for modeling the number of times an event occurs in a fixed number of trials, where each trial has only two possible outcomes?
(A) Normal Distribution
(B) Exponential Distribution
(C) Poisson Distribution
(D) Binomial Distribution

24. The Normal Distribution is often referred to as the "bell curve" because of its shape. Which of

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276. (A) The Primary Health Centre (PHC)
In the hierarchical rural health infrastructure, the Primary Health Centre occupies a pivotal middle tier. It serves as the immediate referral unit for several Sub Health Centres located within its jurisdiction. By providing more advanced curative and preventive services than the sub-centres, the PHC ensures that patients requiring a higher level of care are appropriately managed before potentially being referred further up.

277. (D) To serve as a 30-bedded hospital providing specialist services
The Community Health Centre represents the third tier of the rural healthcare system, acting as a small-scale hospital. It typically features 30 beds and provides essential specialist services in areas such as surgery, medicine, and obstetrics. Functioning as a referral hub for multiple Primary Health Centres, the CHC is vital for delivering specialized medical care to rural populations closer to their homes.

278. (B) SHC, PHC, CHC
The rural health system in India is organized in a clear, ascending hierarchy based on the level of care and population coverage. The Sub Health Centre is the most basic unit at the grassroots level. This is followed by the Primary Health Centre, which serves a larger area. The hierarchy culminates at the local level with the Community Health Centre facility.

279. (C) Ensure everyone gets health services without financial hardship
Universal Health Care refers to a system where all people can access the health services they need without facing financial difficulty. In the passage, it highlights the broader goal of India's health structure — not privatization or restriction — but equitable access. Thus, its purpose is to ensure necessary healthcare reaches everyone affordably and without economic hardship.

280. (D) The roles and responsibilities of various health personnel
The functionality of the tiered health delivery system depends heavily on its human resources. Various categories of health personnel are assigned specific roles and responsibilities that must be fulfilled to ensure the success of the Family Welfare Programme. Without the effective coordination and performance of these individuals across different levels of the hierarchy, the physical infrastructure cannot achieve its public health objectives.

281. (A) To make the health system more responsive and accountable locally
Enhancing the role of Panchayati Raj Institutions is a key strategy for decentralizing healthcare management in India. By empowering these local government bodies, the health system becomes more integrated into the community. This shift aims to improve the responsiveness of services to local needs and increase the accountability of health providers to the people they serve, ultimately leading to better health outcomes.

282. (B) Leverage private sector resources to supplement public efforts
Public-Private Partnerships are increasingly utilized in the health sector to bridge gaps in service delivery. These collaborations are designed to leverage the efficiency, specialized expertise, and financial resources of the private sector. By working alongside the public health system, such partnerships can expand the reach and improve the quality of healthcare and family welfare services, particularly in areas where public resources are limited.

283. (B) Reducing malnutrition
The collaboration between the Integrated Child Development Services and the health sector is a vital inter-sectoral strategy. Its primary objective is to address the multifaceted causes of malnutrition among children. By coordinating efforts in nutrition, health monitoring, and early education, these two sectors create a synergy that is more effective in improving nutritional status and child survival than either could achieve alone.

284. (A) It is fundamental to preventing many communicable diseases
Coordination between the health sector and departments responsible for hygiene, water, and sanitation is critical for public health. Access to clean water and proper sanitation facilities is a fundamental requirement for preventing the spread of many communicable diseases. By addressing these environmental determinants of health through inter-sectoral action, the country

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32. Logistic regression analysis is most appropriately used in which of the following scenarios?
(A) Predicting a student's final exam score based on hours studied.
(B) Predicting whether a customer will purchase a product (yes/no) based on their age and income.
(C) Understanding the relationship between height and weight.
(D) Comparing the average income across three different cities.

33. What is a 'sampling frame' in the context of research?
(A) The total population that the research is about.
(B) A list of all the items or individuals from which a sample is drawn.
(C) The method used to select the sample.
(D) The final selected group of participants for the study.

34. A 'sampling unit' is best defined as:
(A) The primary element or group of elements eligible for selection in the sample.
(B) The entire population under study.
(C) The margin of error in the sample.
(D) The list from which the sample is drawn.

35. Match the sampling terms in List I with their definitions in List II:
List I:
P. Sampling Frame,
Q. Sampling Error,
R. Standard Error,
S. Non-sampling Error.
List II:
1. Human mistakes,
2. Estimate accuracy,
3. Chance discrepancy,
4. Comprehensive list.
(A) P-1, Q-2, R-3, S-4
(B) P-4, Q-1, R-2, S-3
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-4, R-1, S-2

36. An error that occurs due to the act of taking a sample, rather than from mistakes in data collection, is known as:
(A) Non-sampling error
(B) Systematic error
(C) Measurement error
(D) Sampling error

37. Non-sampling errors can arise from all of the following sources EXCEPT:
(A) A poorly designed questionnaire.
(B) Mistakes made during data entry.
(C) The random chance that a sample is not perfectly representative of the population.
(D) Refusal of some selected individuals to participate in the survey.

38. The standard error of a statistic is a measure of:
(A) The bias in the survey instrument.
(B) The variability of the statistic from sample to sample.
(C) The total size of the population.
(D) The number of non-respondents in a survey.

39. The determination of an appropriate sample size for a study depends on several factors. Which of the following is NOT a primary factor in this calculation?
(A) The desired level of confidence.
(B) The acceptable margin of error.
(C) The variability of the characteristic in the population.
(D) The personal preferences of the researcher.

40. Consider the following statements about sampling methods:
I. In simple random sampling, every member of the population has an equal chance of being selected.
II. Stratified random sampling involves dividing the population into homogeneous subgroups and then sampling from each.
III. Cluster sampling is more efficient when the population is geographically dispersed.
IV. Purposive sampling is a type of probability sampling.
Which of the above statements are correct?
(A) I, II, and IV only
(B) I, II, and III only
(C) II, III and IV only
(D) All I, II, III, and IV

41. In which sampling technique is the population divided into mutually exclusive groups (strata), and random samples are drawn from each group?

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P. True Experimental,
Q. Longitudinal,
R. Descriptive,
S. Quasi-Experimental.

List II: (Key Characteristic)
1. Single point description,
2. No random assignment,
3. Repeated subjects,
4. Random assignment.

(A) P-4, Q-3, R-1, S-2
(B) P-3, Q-4, R-2, S-1
(C) P-4, Q-1, R-3, S-2
(D) P-2, Q-3, R-1, S-4

9. All of the following are characteristics of a true experimental study EXCEPT:
(A) Manipulation of an independent variable.
(B) Use of a control group.
(C) Observation of subjects in their natural environment without intervention.
(D) Random assignment of participants.

10. A study design that involves repeated observations of the same variables over long periods of time, often many years, is known as a:
(A) Longitudinal study
(B) Cross-sectional study
(C) Descriptive study
(D) Case-control study

11. Consider the following statements about research design:
I. A panel study is a type of longitudinal study that collects data from the same sample of individuals over time.
II. Reliability in research design refers to the accuracy of a measure, or its ability to measure what it is supposed to measure.
III. A quasi-experimental design has a control group but lacks random assignment.
IV. An exploratory study is undertaken when not much is known about the problem.

Which of the above statements are correct?
(A) I, III, and IV only
(B) I, II, and III only
(C) II and IV only
(D) All I, II, III, and IV

12. What does 'validity' in a research design primarily refer to?
(A) The consistency, stability, and repeatability of research findings.
(B) The accuracy of a measure in capturing its intended concept.
(C) The degree to which results generalize to broader populations.
(D) The practical feasibility of the research within budget limits.

13. The primary difference between a panel study design and a typical longitudinal study is that a panel study:
(A) Always uses a control group.
(B) Is only used in experimental research.
(C) Collects data from the exact same individuals at each wave of data collection.
(D) Collects data only once.

14. Consider the following statements regarding research design and methods:
I. The primary goal of a quasi-experimental study is to explore a new research area.
II. Qualitative data collection methods include interviews and focus group discussions.
III. The odds ratio is a measure of effect size, describing the strength of association between two binary variables.
IV. A panel study is a type of cross-sectional design.
V. Data quality in evaluation research is crucial for making valid judgments about a programme's effectiveness.

Which of the above statements are correct?
(A) I, II, and III only
(B) II, III, and V only
(C) I, IV, and V only
(D) II, IV, and V only

15. Consider the following two statements regarding research measurement:
Statement I: The main difference between a true experimental study and a quasi-experimental study is the random assignment of subjects.
Statement II: Reliability refers to the consistency of a measure, while validity refers to its accuracy.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

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S. Conclusion.

List II:

1. Study procedures,
2. Summary and recommendations,
3. Problem statement,
4. Theoretical background.

(A) P-3, Q-4, R-1, S-2
(B) P-4, Q-3, R-1, S-2
(C) P-3, Q-1, R-4, S-2
(D) P-2, Q-4, R-1, S-3

51. What is the primary difference between a brief research report and a detailed research report?
(A) A brief report is for internal use, while a detailed report is for external publication.
(B) A brief report omits the methodology section entirely.
(C) A brief report provides a concise summary, whereas a detailed report is comprehensive.
(D) A brief report is qualitative, while a detailed report is quantitative.

52. The 'Interpretations of Results' section of a research report should:
(A) Present statistical outputs only without any further explanation.
(B) Re-state the methodology section and data collection in detail.
(C) Propose an entirely new and unrelated research question to explore.
(D) Discuss findings in the context of research questions and literature.

53. Which of the following is a core principle of the 'Researcher's Ethical code'?
(A) Ensuring the research findings support the client's desired outcome.
(B) Using the collected data for personal commercial gain.
(C) Maintaining objectivity and avoiding bias in data collection, analysis, and reporting.
(D) Sharing respondents' personal information with the client.

54. The ethical principle of ensuring that research participants are not exposed to harm, discomfort, or undue stress is known as:
(A) Anonymity
(B) Non-maleficence
(C) Confidentiality
(D) Beneficence

55. Consider the following statements about ethics in research:
I. Client's Ethical code involves maintaining confidentiality of the research findings if agreed upon.
II. Researcher's Ethical code includes being honest about the limitations of the study.
III. Ethical codes related to respondents include obtaining informed consent.
IV. It is ethically permissible to fabricate data to support a strong hypothesis.

Which of the above statements are correct?
(A) I and II only
(B) I, II, and III only
(C) II, III, and IV only
(D) All I, II, III, and IV

56. 'Informed consent' in research ethics implies that respondents:
(A) Have been fully informed about the nature of the research and have voluntarily agreed to participate.
(B) Are paid for their participation.
(C) Agree to participate without knowing the purpose of the study to avoid bias.
(D) Have a university degree.

57. What is the primary difference between monitoring and evaluation?
(A) Monitoring is done by external agencies, while evaluation is done by internal staff.
(B) Monitoring focuses on impact, while evaluation focuses on inputs.
(C) Monitoring is continuous tracking, whereas evaluation is periodic assessment.
(D) There is no difference; the terms are interchangeable.

58. Consider the following statements regarding many concepts in programme M&E:
I. Monitoring tracks whether programme activities are being implemented as planned.
II. Evaluation assesses the overall effectiveness and worth of a programme.
III. Concurrent evaluation happens after the programme has ended.
IV. Monitoring primarily uses data from special surveys, not service statistics.
V. Both monitoring and evaluation are crucial for evidence-based decision-making.

Which of the above statements are correct?

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III. 'Association' and 'correlation' are interchangeable.
IV. 99% CI is wider than 95% CI.
Which of the above statements are correct?
(A) I and IV only
(B) II and III only
(C) I, II and IV only
(D) All I, II, III, and IV

99. In the context of sampling, what is the primary purpose of a 'sampling design'?
(A) To design the questionnaire.
(B) To create the sampling frame.
(C) To outline the procedure for selecting the sample from the population.
(D) To calculate the sample size.

100. Which type of sampling is most appropriate when the population is homogeneous and a complete list of individuals is available?
(A) Cluster sampling
(B) Stratified sampling
(C) Purposive sampling
(D) Simple random sampling

101. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R):
Assertion (A): Non-sampling errors can be more difficult to control and quantify than sampling errors.
Reason (R): Non-sampling errors arise from a wide variety of sources, including human mistakes, ambiguous questions, and non-response bias, which are not easily modeled mathematically.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

102. What is purposive sampling?
(A) A probability sampling technique where every unit has a known chance of selection.
(B) A non-probability technique where participants are selected based on research goals.
(C) A method involving the selection of every nth element from a list.
(D) A technique where the population is divided into clusters and selected randomly.

103. The 'design effect' is expected to be greater than 1 in which of the following sampling designs?
(A) Simple random sampling
(B) Stratified random sampling with proportional allocation
(C) Systematic sampling from an unordered list
(D) Cluster sampling

104. The process of formulating a research hypothesis involves:
(A) Translating a research problem into a clear, testable proposition.
(B) Proposing a definitive answer to the research problem.
(C) Selecting the statistical tests to be used.
(D) Summarizing the final findings of the study.

105. Consider the following statements regarding essential components of research ethics:
I. Informed consent,
II. Anonymity and confidentiality,
III. Avoiding plagiarism,
IV. Benefits outweigh risks,
V. Disclosing conflicts of interest.
Which of the above statements are correct?
(A) I, II, and III only
(B) I, II, III, and IV only
(C) II, IV, and V only
(D) All I, II, III, IV, and V

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106. In a research report, where would you typically find a detailed description of the study's limitations?
(A) In the discussion or conclusion section.
(B) In the introduction section.
(C) In the abstract.
(D) In the appendix.

107. The ethical code related to the client or funding agency of a research project primarily involves:
(A) Guaranteeing a specific, favorable outcome.
(B) Sharing the confidential data of respondents with the client.
(C) Using the client's funds for unrelated projects.
(D) Maintaining transparency about the research methodology and delivering the agreed-upon research product.

evaluation aims to _____, while summative evaluation aims to _____.
(A) assess impact; assess process
(B) use qualitative data; use quantitative data
(C) be expensive; be inexpensive
(D) improve a programme; judge a programme's worth

69. An 'impact indicator' for a health programme is designed to measure:
(A) The number of workshops conducted.
(B) The financial resources invested.
(C) The long-term, sustained changes in the health status of the population.
(D) The number of beneficiaries reached by the service.

70. Match the indicator types in List I with their corresponding examples in List II:
List I:
P. Input,
Q. Process,
R. Outcome,
S. Impact.
List II:
1. Mortality ratio reduction,
2. Immunization percentage,
3. Workers trained,
4. Vaccine availability.
(A) P-4, Q-3, R-2, S-1
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-2, R-3, S-1
(D) P-1, Q-3, R-2, S-4

71. In the context of programme evaluation, what is the role of surveys?
(A) To provide real-time data for daily monitoring.
(B) To replace the need for HMIS entirely.
(C) To exclusively measure programme inputs.
(D) To collect population-based data on outcomes and impacts not in routine statistics.

72. In GIS, the term 'site' refers to _____, while 'location' refers to _____.
(A) the physical attributes of a place; the position relative to other places
(B) the absolute position; the physical attributes of a place
(C) the relative position; the absolute position
(D) a point on a map; the area of the map

73. What is a 'map projection'?
(A) The process of printing a map.
(B) The legend or key of a map.
(C) A method for representing the curved surface of the earth on a flat plane.
(D) The scale of a map.

74. A 'thematic map' is a type of map that is specifically designed to:
(A) Display the spatial pattern of a particular attribute, such as population density.
(B) Show physical features like mountains, valleys, and rivers.
(C) Show roads and political boundaries for general navigation.
(D) Represent the earth with perfect geometric accuracy in shape.

75. Consider the following examples of data:
I. The coordinates of a hospital.
II. The boundaries of a district.
III. The name of the doctor in charge of the hospital.
IV. The number of beds in the hospital.
Which of the above are examples of spatial data?
(A) I and II only
(B) III and IV only
(C) I, II, and III only
(D) I, II, III, and IV

76. In GIS, data representing features with distinct boundaries, such as roads, buildings, or political borders, are best represented using:
(A) Raster data
(B) Vector data
(C) Continuous data
(D) Non-spatial data

77. Which statement correctly distinguishes between Raster and Vector data models?
(A) Vector data uses grid cells, while Raster data uses points, lines, and polygons.
(B) Raster data is better for discrete features, while Vector is for continuous phenomena.
(C) Raster data uses a grid of cells, while Vector data uses spatial coordinates.
(D) Vector data is generally larger in file size for the same area compared to raster.

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78. The process of assigning geographic coordinates (e.g., latitude and longitude) to map features or other data records is known as:
(A) Digitization
(B) Map projection
(C) Layout preparation
(D) Geo-referencing/Geo-coding

79. In GIS, 'digitization' refers to the process of:
(A) Converting paper maps or scanned images into digital vector data.
(B) Preparing a map for printing.
(C) Analyzing the spatial relationships between data layers.
(D) Assigning a coordinate system to a dataset.

80. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R):
Assertion (A): Vector data models are generally preferred for representing networks like roads or rivers.
Reason (R): The use of points, lines, and polygons in the vector model allows for precise definition of feature locations and shapes, which is ideal for network analysis and cartographic representation.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

81. A 'frequency polygon' is a graph constructed by:
(A) Using bars to represent the frequency of each category.
(B) Plotting class frequencies against class midpoints and joining the points with straight lines.
(C) Showing cumulative frequency.
(D) Representing data in a circular chart.

82. Which of the following is a measure of spatial auto-correlation that indicates whether a variable's values are clustered, dispersed, or randomly distributed in space?
(A) Moran's I index
(B) Kriging
(C) Spatial regression
(D) Matrix algebra

83. The technique of 'spatial interpolation' in GIS is used to:
(A) Create a projection for a new map.
(B) Digitize a paper map.
(C) Estimate values at unsampled locations based on the values at known sampled locations.
(D) Measure the correlation between two different maps.

84. What is 'Kriging'?
(A) A mathematical method used for performing complex map projections on flat planes.
(B) A specific type of spatial data model used for managing geographic databases.
(C) A digital technique used for converting raster images into high-resolution maps.
(D) An advanced geostatistical interpolation method using spatial data correlation.

85. Consider the following statements regarding concepts in spatial analysis:
I. Spatial regression models account for the spatial dependency in the data.
II. A frequency curve is a smoothed version of a frequency polygon.
III. Moran's I close to +1 indicates clustering.
IV. Kriging is a deterministic method.
V. Bar diagrams are for non-spatial data.
Which of the above statements are correct?
(A) I, II, and III only
(B) II, III, and V only
(C) I, IV, and V only
(D) I, II, and IV only

86. The concept of 'research design' primarily functions as a:
(A) Tool for data collection.
(B) Framework for conducting research to answer a specific question.
(C) Method for statistical analysis.
(D) Guideline for writing the research report.

87. Which type of research is synonymous with evaluative research and is designed to find out how well a programme, practice, or policy is working?
(A) Action Research
(B) Operations Research
(C) Formative Research
(D) Programme Evaluation Research

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88. Consider the following two statements regarding study designs:
Statement I: An exploratory study is best suited for problems about which there is little to no prior knowledge.
Statement II: A descriptive study aims to accurately and systematically describe a population, situation or phenomenon.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

89. A study that collects data from a sample at a single point in time is known as a:
(A) Longitudinal Study
(B) Panel Study
(C) Cross-sectional Study
(D) Experimental Study

90. In a research context, if a measurement tool consistently produces the same results under the same conditions, it is said to have high:
(A) Reliability
(B) Validity
(C) Generalizability
(D) Objectivity

91. Which of the following is the best example of a qualitative method of data collection?
(A) A structured survey with a Likert scale.
(B) A laboratory experiment measuring reaction times.
(C) Analysis of national census data.
(D) An in-depth interview with a key informant.

92. Match the data collection methods in List I with their corresponding examples in List II:
List I:
P. Quantitative,
Q. Qualitative,
R. Primary Data,
S. Secondary Data.
List II:
1. Specific study purpose data,
2. Focus groups/interviews,
3. Existing census data,
4. Large-scale surveys.
(A) P-1, Q-3, R-4, S-2
(B) P-4, Q-2, R-1, S-3
(C) P-4, Q-1, R-2, S-3
(D) P-2, Q-4, R-3, S-1

93. A relative risk (RR) of 2.5 for a disease among an exposed group means that:
(A) The exposed group is 1.5 times more likely to get the disease than the unexposed group.
(B) For every 2.5 people in the exposed group, one will get the disease.
(C) The exposed group is 2.5 times more likely to get the disease than the unexposed group.
(D) The risk of disease is 2.5% higher in the exposed group.

94. The law of probability that states P(A or B) = P(A) + P(B) is only true if events A and B are:
(A) Independent
(B) Dependent
(C) Conditional
(D) Mutually exclusive

95. In population data analysis, the Exponential distribution is often used to model:
(A) The time between events in a Poisson process, such as the time between patient arrivals at a clinic.
(B) The number of successes in a fixed number of trials.
(C) Data that is symmetrically distributed around a central value.
(D) The probability of a binary outcome.

96. If a researcher fails to reject a null hypothesis that is actually false, what type of error has been made?
(A) Type I error
(B) Type II error
(C) Sampling error
(D) Non-sampling error

97. A correlation coefficient of -0.85 between two variables indicates:
(A) A weak negative linear relationship.
(B) A strong negative linear relationship.
(C) A strong positive linear relationship.
(D) No linear relationship.

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98. Consider the following statements about statistical concepts:
I. Regression analysis helps understand relationship nature and prediction.
II. P-value is Type I error probability.

138. The process of creating a final map for presentation, including a title, legend, scale bar, and north arrow, is known as:
(A) Layout preparation
(B) Digitization
(C) Geo-coding
(D) Spatial interpolation

139. A positive value of Moran's I index suggests:
(A) A random spatial pattern.
(B) A dispersed spatial pattern (dissimilar values are close to each other).
(C) A perfect correlation between two variables.
(D) A clustered spatial pattern (similar values are close together).

140. Match the techniques in List I with their purposes in List II regarding spatial analysis:
List I:
P. Spatial Interpolation,
Q. Moran's I,
R. Spatial Regression,
S. Geocoding.
List II:
1. Coordinate assignment,
2. Dependency modeling,
3. Auto-correlation measurement,
4. Value estimation.
(A) P-4, Q-3, R-2, S-1
(B) P-3, Q-4, R-1, S-2
(C) P-4, Q-2, R-3, S-1
(D) P-1, Q-3, R-2, S-4

141. The analytical framework of research primarily involves:
(A) Defining the core concepts of the study.
(B) Collecting data through observation.
(C) The structure and logic used to interpret data and draw conclusions.
(D) The initial exploration of a research topic.

142. A study that involves manipulation of an independent variable but does not have a pre-test or a control group is best described as a:
(A) True experimental design
(B) Quasi-experimental design
(C) Correlational design
(D) Pre-experimental design

143. Consider the following two statements regarding study design issues:
Statement I: A panel study design is less susceptible to attrition than a standard longitudinal design.
Statement II: Issues of reliability and validity are concerns for quantitative research but not for qualitative research.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

144. In a clinical trial, if the risk of an adverse event is 10% in the placebo group and 5% in the treatment group, the Relative Risk (RR) for the treatment group is:
(A) 2.0
(B) 0.5
(C) 1.5
(D) 0.1

145. What is the primary purpose of using logistic regression?
(A) To predict a continuous dependent variable.
(B) To predict a categorical dependent variable.
(C) To measure the correlation between two continuous variables.
(D) To compare the means of more than two groups.

146. A researcher divides a city into census tracts, randomly selects 10 tracts, and then surveys every household within those selected tracts. This is an example of:
(A) Cluster sampling
(B) Stratified sampling
(C) Simple random sampling
(D) Systematic sampling

147. Formulating a research hypothesis is a critical step because it:
(A) Guarantees that the research will be published.
(B) Is the final conclusion of the research.
(C) Provides a tentative explanation and guides the direction of the study.
(D) Eliminates the need for a literature review.

148. The section of a research report that provides a concise, comprehensive summary of the entire study is the:
(A) Introduction

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108. Monitoring a programme helps in:
(A) Making a final judgment on the overall success of the programme.
(B) Taking corrective actions during the implementation of the programme.
(C) Understanding the long-term impact on the community.
(D) Conducting a cost-benefit analysis after the programme is over.

109. An indicator like "Number of ante-natal care (ANC) sessions conducted per month" would be classified as a:
(A) Input indicator
(B) Outcome indicator
(C) Process indicator
(D) Impact indicator

110. Arrange the following evaluation types in the typical chronological order:
I. Mid-term,
II. Ex-ante,
III. Terminal,
IV. Ex-post.
(A) I, II, III, IV
(B) II, I, III, IV
(C) II, III, I, IV
(D) IV, III, II, I

111. When evaluating the 'availability' of a health service, a researcher is primarily concerned with:
(A) Whether the physical presence of the service (e.g., health facility, staff) exists for the population to use.
(B) Whether the service is affordable for all sections of the population.
(C) The quality of care provided by the service.
(D) The long-term health impact of the service.

112. Which statement regarding the types of evaluation is INCORRECT?
(A) Formative evaluation helps to shape and improve a programme in its early stages.
(B) Concurrent evaluation is a type of summative evaluation.
(C) Summative evaluation is conducted at the end of a programme to assess its overall effectiveness.
(D) A comprehensive programme evaluation framework often includes formative, concurrent, and summative components.

113. "Percentage of households with access to safe drinking water" is an example of an:
(A) Input indicator
(B) Outcome indicator
(C) Process indicator
(D) Output indicator

114. The concept of 'scale' in GIS and geography refers to:
(A) The ratio between the distance on a map and the corresponding distance on the ground.
(B) The physical size of the map.
(C) The type of coordinate system used.
(D) The projection of the map.

115. Match the GIS data concepts in List I with their descriptions in List II:
List I:
P. Vector Data,
Q. Raster Data,
R. Geo-referencing,
S. Digitizing.
List II:
1. Digital data creation,
2. Alignment to coordinates,
3. Point/Line/Polygon model,
4. Grid/Pixel model.
(A) P-1, Q-2, R-3, S-4
(B) P-3, Q-4, R-1, S-2
(C) P-3, Q-4, R-2, S-1
(D) P-4, Q-3, R-2, S-1

116. A 'plane coordinate system' like UTM (Universal Transverse Mercator) is used to:
(A) Locate points on the Earth's curved surface using latitude and longitude.
(B) Define the scale of a map.
(C) Digitize a map.
(D) Locate points on a flat map using x, y coordinates.

117. The digital representation of continuous data, like elevation or temperature, is most efficiently handled by which data model in GIS?
(A) Vector data
(B) Non-spatial data
(C) Raster data
(D) Tabular data

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118. In spatial analysis, which of the following is a uni-variate statistic?
(A) Spatial correlation
(B) Mean center
(C) Spatial regression
(D) Bivariate Moran's I

119. Spatial regression models are an improvement over traditional regression models in geographical analysis because they:
(A) Are simpler to calculate.
(B) Do not require the dependent variable to be normally distributed.
(C) Can only be used with vector data.
(D) Explicitly account for spatial effects like spatial auto-correlation.

120. Consider the following statements about scientific research:
I. Analytical framework decision making.
II. Empirical framework relies on observation.
III. Conceptual framework is research exploration idea.
IV. Always results in a new theory.
Which of the above statements are correct?
(A) I, II, and III only
(B) I and II only
(C) III and IV only
(D) All I, II, III, and IV

121. Research that is undertaken to improve the quality of decision-making and efficiency within an organization, often using mathematical models, is called:
(A) Action research
(B) Formative research
(C) Operations research
(D) Exploratory research

122. Consider the following two statements regarding experimental research:
Statement I: In a true experiment, the control group receives the experimental treatment.
Statement II: A quasi-experiment lacks random assignment to treatment and control groups.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

123. The issue of 'reliability' in a research design is concerned with:
(A) The accuracy of the findings.
(B) The ethical implications of the research.
(C) The novelty of the research topic.
(D) The consistency and stability of the measurement.

124. When the odds of an outcome are the same for two groups, the Odds Ratio (OR) will be:
(A) 0
(B) 1
(C) -1
(D) 100

125. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R):
Assertion (A): In population studies, the Normal distribution is a fundamental concept for statistical inference.
Reason (R): The Central Limit Theorem states that the sampling distribution of the sample mean will be approximately normally distributed for large sample sizes, regardless of the population's distribution.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

126. A null hypothesis (H0) for testing the difference between two group means would typically be stated as:
(A) The mean of group 1 is greater than the mean of group 2.
(B) The means of group 1 and group 2 are different.
(C) The mean of group 1 is not equal to the mean of group 2.
(D) There is no difference between the means of group 1 and group 2.

127. If a p-value is calculated to be 0.25, what is the appropriate conclusion at a 5% level of significance?
(A) Fail to reject the null hypothesis.
(B) Reject the null hypothesis.
(C) Accept the alternative hypothesis.

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(D) The result is statistically significant.

128. What concept is defined as the entire group of individuals or items that a researcher is interested in studying?
(A) Sample
(B) Population
(C) Sampling frame
(D) Sampling unit

129. A large standard error indicates that:
(A) The sample estimate is very precise.
(B) The sampling distribution variability is high, meaning estimates may differ from the parameter.
(C) The sample estimate is likely to be close to the true population parameter.
(D) The sample size is very large.

130. Consider the following statements regarding aspects of sampling and research formulation:
I. Problem definition final step.
II. Falsifiable hypothesis.
III. Multi-stage sampling.
IV. Design effect of 2.0.
V. Purposive sampling ideal for inference.
Which of the above statements are correct?
(A) I, II, and V only
(B) II, III, and IV only
(C) I, III, and V only
(D) II, IV, and V only

131. A researcher wants to study the lived experiences of teenage mothers. Which sampling method would be most appropriate?
(A) Simple random sampling
(B) Systematic sampling
(C) Purposive sampling
(D) Cluster sampling

132. What is the main purpose of the 'recommendations' section in a research report?
(A) To suggest specific areas for potential future research projects.
(B) To summarize the key and most relevant findings of the study.
(C) To list all the academic references cited within the full report.
(D) To propose actionable steps based on interpretation of results.

133. Ensuring that a respondent's identity is not linked to their responses in any way is the principle of:
(A) Confidentiality
(B) Informed consent
(C) Anonymity
(D) Beneficence

134. Which question is most characteristic of a monitoring activity?
(A) What has been the long-term effect of the program on child malnutrition?
(B) Are the health clinics stocked with the necessary medicines as planned?
(C) Was the programme a worthwhile use of public funds?
(D) How did the programme's outcomes compare to a control group?

135. Evaluating the 'gender perspectives' in RMNCH+A services involves examining:
(A) Whether services are available only for women.
(B) The number of male versus female health workers.
(C) The total cost of services for men versus women.
(D) How gender norms affect access to and control over healthcare.

136. A programme evaluation finds that a new teaching method (the programme's output) has led to higher test scores among students (the change in students). The higher test scores are an example of an:
(A) Outcome
(B) Input
(C) Process
(D) Impact

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137. Which of the following is an example of non-spatial data that might be linked to a spatial feature in a GIS?
(A) The latitude and longitude of a school.
(B) The polygon representing a school district.
(C) The name of the principal of the school.
(D) The line representing the road leading to the school.

(A) I, II, and V only
(B) III, IV, and V only
(C) I, III, and IV only
(D) I, II, and IV only

59. The Health Management Information System (HMIS) primarily serves as a tool for:
(A) Summative evaluation of national policies.
(B) Conducting randomized controlled trials.
(C) Training community health workers.
(D) Programme monitoring by providing routine service statistics.

60. An 'input indicator' in programme monitoring measures:
(A) The long-term impact of the programme on the population.
(B) The resources used for the programme, such as funds, staff, and supplies.
(C) The immediate results of the programme activities, such as the number of people trained.
(D) The extent to which the target population uses the programme services.

61. Which of the following is an example of an 'output' indicator for a maternal health programme?
(A) The total budget allocated for the programme.
(B) The infant mortality rate in the project area.
(C) The number of pregnant women who received at least three antenatal care check-ups.
(D) The number of nurses trained in essential newborn care.

62. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R):
Assertion (A): HMIS data is a vital tool for the day-to-day monitoring of health programmes.
Reason (R): It provides timely data on service delivery (inputs, processes, outputs) which helps managers to identify and address implementation bottlenecks.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

63. The 'acceptance/utilization rate' of a service is best classified as which type of indicator?
(A) Outcome indicator
(B) Input indicator
(C) Process indicator
(D) Output indicator

64. A significant limitation of using HMIS data for programme evaluation is:
(A) It provides data too frequently.
(B) It may suffer from issues of incompleteness, inaccuracy, and reporting biases.
(C) It is often of high quality and free of errors.
(D) It primarily measures long-term impact rather than service delivery.

65. Arrange the following indicators in the logical sequence of a programme's results chain, from initial resources to long-term change:
I. Outcome,
II. Input,
III. Impact,
IV. Output,
V. Process.
(A) V, II, IV, III, I
(B) II, V, IV, I, III
(C) II, IV, V, I, III
(D) I, II, III, IV, V

66. When evaluating the 'equity' of RMNCH+A services, a researcher would most likely analyze:
(A) The differences in service access and outcomes between different socioeconomic or geographical groups.
(B) The total number of services provided.
(C) The cost-effectiveness of the interventions.
(D) The average waiting time at health facilities.

67. Which type of evaluation is conducted during the implementation of a programme to provide feedback for immediate improvements?
(A) Summative evaluation
(B) Impact evaluation
(C) Concurrent evaluation
(D) Ex-post evaluation

68. The key difference between formative and summative evaluation is that formative

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(B) Conclusion
(C) Literature Review
(D) Abstract

149. "Concurrent evaluation" is so named because it occurs:
(A) Concurrently with the final report writing.
(B) Concurrently in multiple different countries.
(C) Concurrently with programme implementation.
(D) Concurrently with the needs assessment phase.

150. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R):
Assertion (A): In programme evaluation, a combination of service statistics and special surveys is often required for a comprehensive assessment.
Reason (R): Service statistics (like HMIS) are good for monitoring outputs, but surveys are often needed to measure population-level outcomes and impacts that routine systems do not capture.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

151. Which of the following best describes the evaluation of 'quality' in RMNCH+A services?
(A) Counting the total number of physical clinics available in a district.
(B) Measuring travel time to the nearest specialized health facility.
(C) Comparing service utilization between different household wealth tiers.
(D) Assessing whether provided services meet professional health standards.

152. In GIS, what kind of data is elevation data (e.g., altitude)?
(A) Continuous data
(B) Discrete data
(C) Categorical data
(D) Non-spatial data

153. A line diagram is a suitable method for representing:
(A) Proportions of a whole.
(B) The frequency distribution of a single variable.
(C) A trend over a period of time.
(D) The spatial clustering of a phenomenon.

154. If a study is designed to determine the cause-and-effect relationship between two variables, the most appropriate research design would be:
(A) Experimental
(B) Descriptive
(C) Exploratory
(D) Correlational

155. Which law of probability is used in Bayes' Theorem to update prior beliefs with new information?
(A) Law of Large Numbers
(B) Law of Total Probability
(C) Additive Law of Probability
(D) Conditional Probability

156. The main advantage of stratified random sampling over simple random sampling is that it:
(A) Is easier and cheaper to implement.
(B) Ensures representation of all identified subgroups and increases precision.
(C) Does not require a sampling frame.
(D) Can be done without knowing the population size.

157. Which type of research report is intended for a professional audience and includes extensive detail on all aspects of the research process?
(A) Brief report
(B) Summary report
(C) Detailed report
(D) Press release

158. What is the fundamental difference between anonymity and confidentiality in research?
(A) Anonymity is for qualitative research; confidentiality is for quantitative.
(B) Confidentiality hides individual identities while anonymity ignores them.
(C) There is no fundamental difference between these two research terms.
(D) Anonymity means the researcher cannot

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(D) The strength of a correlation.

224. Which of the following is an example of a non-sampling error?
(A) The error caused by observing a sample instead of the whole population.
(B) A respondent misunderstanding a survey question.
(C) The random variation between different possible samples.
(D) A smaller standard error due to a large sample size.

225. Match the ethical principles in List I with their corresponding applications in List II:
List I:
P. Beneficence,
Q. Justice,
R. Anonymity,
S. Confidentiality.
List II:
1. Identity known but kept secret,
2. Fair distribution,
3. No link to data,
4. Maximize benefits/minimize harm.
(A) P-4, Q-2, R-3, S-1
(B) P-2, Q-4, R-1, S-3
(C) P-4, Q-3, R-1, S-2
(D) P-1, Q-2, R-3, S-4

226. What does an 'output' indicator measure in programme evaluation?
(A) The direct products and services delivered by the programme.
(B) The financial resources invested in the programme.
(C) The long-term change in the population's status.
(D) The skills of the programme staff.

227. In GIS, 'location' refers to a position defined in relation to other features, which is also known as:
(A) Absolute location
(B) Site
(C) Situation or relative location
(D) Geocode

228. In the context of spatial statistics, auto-correlation refers to:
(A) The correlation between two different variables at the same location.
(B) The correlation between two different maps.
(C) The accuracy of a GPS reading.
(D) The correlation of a variable with itself through space.

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229. A researcher wants to assess the impact of a new fertilizer on crop yield. She divides a field into 20 plots, randomly assigns 10 plots to receive the new fertilizer and 10 to receive a standard fertilizer, and then measures the yield from each plot. This is an example of:
(A) A descriptive study
(B) A quasi-experimental study
(C) A true experimental study
(D) A panel study

230. Consider the following statements about data analysis concepts:
I. 'Association' may not be causal.
II. Correlation +1.0 inverse.
III. 'Regression' for relationship modeling.
IV. P-value 0.01 more significant than 0.05.
Which of the above statements are correct?
(A) I, II, and III only
(B) I, III, and IV only
(C) II and IV only
(D) All I, II, III, and IV

231. The primary purpose of a sampling frame is to:
(A) Determine the required sample size.
(B) Define the research problem.
(C) Analyze the collected data.
(D) Provide a list from which to draw a representative sample.

232. What is the defining characteristic of a research hypothesis that distinguishes it from a research question?
(A) A hypothesis is a predictive statement that can be tested.
(B) A hypothesis is a question, while a question is a statement.
(C) A hypothesis is only used in qualitative research.
(D) A hypothesis is based on the researcher's opinion, not on theory.

233. The 'Client's Ethical code' in research primarily obligates the client to:
(A) Guarantee publication of the research.

(D) Dividing populations into clusters.

170. Which of the following does NOT fall under the ethical responsibilities of a researcher towards respondents?
(A) Providing a detailed copy of the final data set to the respondent.
(B) Ensuring voluntary participation.
(C) Protecting confidentiality.
(D) Minimizing risk and harm.

171. In programme evaluation, which indicator level is the most difficult to measure and attribute to a specific programme?
(A) Input
(B) Process
(C) Output
(D) Impact

172. The term "spherical coordinate system" in geography refers to the system that uses:
(A) X and Y coordinates on a flat grid.
(B) Latitude and longitude to define locations on the Earth's surface.
(C) Elevation and depth.
(D) Street addresses and postal codes.

173. What is a major advantage of using a Raster data model in GIS?
(A) It is highly precise for representing boundaries.
(B) It is ideal for network analysis.
(C) It simplifies many spatial analysis operations, particularly for continuous data.
(D) It has a very small file size for high-resolution data.

174. Which of the following is NOT a type of map projection?
(A) Mercator Projection
(B) Conic Projection
(C) Azimuthal Projection
(D) Vector Projection

175. Match the sampling methods in List I with their corresponding procedures in List II:
List I:
P. Simple Random,
Q. Systematic,
R. Stratified,
S. Cluster.
List II:
1. k-th unit selection,
2. Group inclusion,
3. Equal/Independent chance,
4. Homogeneous subgroups.
(A) P-3, Q-1, R-4, S-2
(B) P-1, Q-3, R-2, S-4
(C) P-3, Q-2, R-4, S-1
(D) P-4, Q-1, R-2, S-3

176. Which type of validity refers to the extent to which the results of a study can be generalized to other populations, settings, or times?
(A) Internal validity
(B) External validity
(C) Construct validity
(D) Content validity

177. Consider the following two statements regarding statistical significance:
Statement I: The p-value indicates the magnitude or size of an effect.
Statement II: A confidence interval provides a range of plausible values for the effect size.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

178. Increasing the sample size in a study generally leads to:
(A) A decrease in the standard error.
(B) An increase in the standard error.
(C) An increase in non-sampling error.
(D) A decrease in the population mean.

179. The primary goal of defining the components of a research problem is to:
(A) Make the research problem broad and all-encompassing in its scope.
(B) Formulate the absolute final conclusion of the research project.
(C) Ensure the problem is specific, clear, and manageable for study.
(D) Select the specialized research team to carry out the necessary tasks.

180. Arrange the typical sections of a detailed research report in the correct order:
I. Methodology,
II. Introduction,

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III. Results,
IV. Literature Review,
V. Discussion.
(A) II, IV, I, III, V
(B) II, I, IV, III, V
(C) I, II, IV, V, III
(D) II, III, IV, I, V

181. A key strength of HMIS data is its:
(A) Perfect accuracy and completeness.
(B) Ability to measure long-term programme impact.
(C) Timeliness and regularity for monitoring service delivery.
(D) Richness in qualitative, contextual information.

182. What does a Moran's I value of approximately zero indicate?
(A) Perfect clustering
(B) A random spatial pattern
(C) Perfect dispersion
(D) A strong negative auto-correlation

183. "Internal validity" in research design refers to the extent to which:
(A) The results can be generalized to the wider population.
(B) The measurement instrument is reliable.
(C) The study follows ethical guidelines.
(D) Observed effects result from the independent variable.

184. When is a Binomial distribution an appropriate model?
(A) For modeling the number of "successes" in a fixed number of independent Bernoulli trials.
(B) For modeling the time until an event occurs.
(C) For modeling the number of events occurring in a fixed interval of time or space.
(D) For modeling a continuous variable that is symmetrically distributed.

185. A sampling frame is considered inadequate if it is:
(A) Complete, accurate, and up-to-date.
(B) In a digital format.
(C) Incomplete, containing duplications, or outdated.
(D) Created by the researcher.

186. The first step in formulating a research hypothesis is usually:
(A) Identifying variables from the research problem.
(B) Collecting the data.
(C) Writing the conclusion.
(D) Selecting a statistical test.

187. "Plagiarism" in research is an ethical violation that involves:
(A) Fabricating data.
(B) Falsifying results.
(C) Failing to obtain informed consent.
(D) Presenting someone else's work or ideas as one's own without proper acknowledgement.

188. Which of the following is an example of an 'outcome' indicator for an education programme?
(A) Budget allocated for textbooks.
(B) Improvement in students' literacy rates.
(C) Number of teachers trained.
(D) Number of schools built.

189. In GIS, discrete data is best represented by _____, while continuous data is best represented by _____.
(A) raster; vector
(B) spatial; non-spatial
(C) vector; raster
(D) raster; raster

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190. Consider the following statements about research design:
I. Longitudinal observational.
II. True experiment characteristics.
III. Reliability pre-requisite for validity.
IV. Exploratory tests specific hypothesis.
Which of the above statements are correct?
(A) I, II, and III only
(B) II and IV only
(C) I, III and IV only
(D) All I, II, III, and IV

191. A key difference between 'correlation' and 'regression' is that regression:
(A) Can be used to predict the value of one variable based on another.
(B) Only measures the strength of the relationship.
(C) Only works for categorical variables.

(D) Is a measure of association, not a predictive tool.

192. Which non-probability sampling technique involves selecting participants who are easily accessible to the researcher?
(A) Purposive sampling
(B) Convenience sampling
(C) Quota sampling
(D) Snowball sampling

193. The primary audience for a brief, summary research report is often:
(A) Other academic researchers in the same field.
(B) Policy-makers and managers who need quick, actionable insights.
(C) Statisticians who want to check the analysis.
(D) The general public.

194. A "summative evaluation" of a health programme would most likely focus on:
(A) Assessing the overall effectiveness and impact after the programme has been running for a significant period.
(B) Identifying implementation problems in the first few months.
(C) Providing daily feedback to programme staff.
(D) Improving the design of the programme before it starts.

195. What does the "A" in RMNCH+A stand for in the context of India's health programme?
(A) Adults
(B) Anemia
(C) Adolescents
(D) Awareness

196. A key feature of a frequency curve is that it is:
(A) A series of rectangles.
(B) Always symmetrical.
(C) A chart showing proportions of a whole.
(D) A smooth, freehand curve drawn through the points of a frequency polygon.

197. A research study that examines the relationship between variables as they exist in the real world without any manipulation is called:
(A) Experimental research
(B) Historical research
(C) Correlational research
(D) Action research

198. Consider the following two statements regarding probability:
Statement I: In probability theory, the sum of probabilities of all possible outcomes of an event is always 1.
Statement II: Bayes' Theorem is used for calculating simple probabilities without prior information.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

199. What is the main disadvantage of cluster sampling compared to stratified sampling?
(A) It is more expensive and time-consuming.
(B) It requires a complete list of the entire population.
(C) It cannot be used when the population is geographically dispersed.
(D) It generally has a larger sampling error for the same sample size due to homogeneity within clusters.

200. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R):
Assertion (A): Ethical considerations are a fundamental component of the entire research process, from design to dissemination.
Reason (R): Adherence to ethical principles protects the rights and welfare of research participants and ensures the integrity and validity of the research findings.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

201. Which term describes the process of systematically tracking the inputs, activities, and outputs of a programme?
(A) Evaluation
(B) Research
(C) Monitoring
(D) Auditing

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link responses to individuals.

159. In the context of a family planning programme, "Couple Years of Protection (CYP)" is often used as a/an:
(A) Output indicator
(B) Input indicator
(C) Impact indicator
(D) Process indicator

160. Consider the following statements about monitoring, evaluation, and research:
I. Monitoring continuous.
II. Evaluation periodic.
III. Action research practical.
IV. HMIS summative evaluation.
Which of the above statements are correct?
(A) I and II only
(B) I, II, and III only
(C) III and IV only
(D) All I, II, III, and IV

161. A map with a scale of 1:25,000 is a _____ scale map compared to a map with a scale of 1:1,000,000.
(A) smaller
(B) larger
(C) equal
(D) variable

162. Consider the following two statements regarding GIS processes:
Statement I: Geo-coding is the process of converting addresses into geographic coordinates.
Statement II: Geo-referencing is the process of aligning an image or map to a known coordinate system.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

163. The use of Matrix Algebra in spatial analysis is often for:
(A) Creating map layouts for publication.
(B) Digitizing existing hardcopy maps.
(C) Manipulating spatial relationship matrices.
(D) Selecting an appropriate map projection.

164. What is the most significant limitation of a descriptive research design?
(A) It is too expensive to conduct.
(B) It requires a very large sample size.
(C) It can only be used with qualitative data.
(D) It cannot establish causal relationships between variables.

165. Consider the following statements regarding research concepts:
I. Hypothesis empirically testable.
II. Reliability pre-requisite for validity.
III. Operations research for decisions.
IV. Formative evaluation for long-term impact.
V. Problem component determines results.
Which of the above statements are correct?
(A) I and III only
(B) I, II, and III only
(C) II, IV, and V only
(D) All are correct

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166. A researcher studies changes in alcohol consumption among college students by surveying a new sample of first-year students each year for five years. This is an example of a:
(A) Panel study
(B) Repeated cross-sectional study
(C) True experimental study
(D) Case study

167. An Odds Ratio of less than 1.0 suggests that:
(A) The exposure is a risk factor for the outcome.
(B) There is no association between the exposure and the outcome.
(C) The study design was flawed.
(D) The exposure is a protective factor against the outcome.

168. If two events are independent, the probability that they both occur is:
(A) The product of their individual probabilities.
(B) The sum of their individual probabilities.
(C) The difference between their individual probabilities.
(D) Always equal to 1.

169. What is a defining characteristic of purposive sampling?
(A) Random selection of participants.
(B) Every member has an equal chance.
(C) Selection based on specific criteria.

213. Consider the following two statements regarding research methodology:
Statement I: Qualitative methods are best for exploring a topic in-depth and understanding context.
Statement II: Quantitative methods are best for generalizing results to a larger population and testing specific hypotheses.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.
(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

214. The 'p-value' helps a researcher decide whether to:
(A) Choose between qualitative and quantitative methods.
(B) Reject or fail to reject the null hypothesis.
(C) Increase the sample size.
(D) Use a different sampling method.

215. What is the primary reason for using multi-stage sampling?
(A) To ensure every individual in a population has an equal selection chance.
(B) To increase estimate precision compared to simple random sampling methods.
(C) To eliminate all potential sampling error within the research project completely.
(D) To create a practical, cost-effective plan when no complete list exists.

216. The structure of a research report typically follows the IMRaD format, which stands for:
(A) Introduction, Methods, Results, and Discussion
(B) Inquiry, Methods, Results, and Data
(C) Introduction, Measurement, Review, and Discussion
(D) Inquiry, Measurement, Results, and Data

217. When an evaluation assesses how a programme has affected different groups (e.g., men vs. women, rural vs. urban), it is focusing on the dimension of:
(A) Availability
(B) Accessibility
(C) Equity
(D) Quality

218. In GIS, which data type would be most appropriate to represent a country's administrative boundaries?
(A) Polygon data
(B) Raster grid
(C) Point data
(D) Line data

219. Kriging is considered a more sophisticated interpolation technique than others like Inverse Distance Weighting (IDW) because:
(A) It is much simpler to calculate numerically.
(B) It can only be used with vector data models.
(C) It does not require spatial auto-correlation.
(D) It provides a measure of estimated value error.

220. The key difference between action research and traditional research is that action research:
(A) Is conducted solely by academics.
(B) Aims to solve a specific, immediate problem and involves the practitioners in the research process.
(C) Is only used in the natural sciences.
(D) Does not require data collection.

221. A researcher finds that a measure of job satisfaction does not actually correlate with observable indicators like employee turnover and absenteeism. This measure likely has a problem with:
(A) Reliability
(B) Sample size
(C) Validity
(D) Non-sampling error

222. An odds ratio of 1.0 indicates:
(A) A strong positive association.
(B) A strong negative association.
(C) The exposure causes the outcome.
(D) The odds of the outcome are the same for the exposed and unexposed groups.

223. The 'concept of confidence interval' refers to:
(A) A range of values constructed from sample data so that the population parameter is likely to occur within that range at a specified probability.
(B) A single point estimate of a population parameter.
(C) The probability of a Type I error.

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(C) Statement I is true, but Statement II is false.
(D) Statement I is false, but Statement II is true.

244. A key limitation of using Relative Risk (RR) is that it:
(A) Cannot be calculated in cohort studies.
(B) Is the same as the odds ratio.
(C) Is only used for qualitative data.
(D) Cannot be calculated in case-control studies.

245. Arrange the steps involved in determining a sample size in the correct chronological order:
I. Margin of error,
II. Variability estimate,
III. Confidence level,
IV. Formula application.
(A) IV, I, II, III
(B) III, I, II, IV
(C) I, II, III, IV
(D) II, I, IV, III

246. What is a "null hypothesis"?
(A) A theoretical hypothesis that the researcher believes is true.
(B) A statement of 'no effect' set up to be statistically tested.
(C) A formal research hypothesis that has been proven false.
(D) The initial overarching research question of the project.

247. A "brief report" differs from a "detailed report" mainly in terms of its:
(A) Accuracy
(B) Ethical standards
(C) Research methodology
(D) Target audience and level of detail

248. The most important purpose of a 'process' indicator in programme monitoring is to:
(A) Track whether programme activities are being implemented as intended.
(B) Assess the long-term impact.
(C) Measure the level of financial investment.
(D) Count the number of beneficiaries.

249. A digital map where the world is represented by a grid of cells, each with a specific value (e.g., land use type), is based on the:
(A) Vector data model
(B) Geodetic data model
(C) Raster data model
(D) Topological data model

250. Spatial interpolation is a method used in GIS to:
(A) Predict values at unknown locations from data at known locations.
(B) Change the geometric projection of a two-dimensional map.
(C) Create a legend for an existing digital thematic map.
(D) Link spatial coordinates and non-spatial attribute data.

Direction : Please read the following source carefully.

Scientific research in the social sciences operates on a tripartite framework comprising conceptual, empirical, and analytical dimensions. The conceptual framework forms the intellectual bedrock of any study, involving the definition of key concepts, the establishment of theoretical underpinnings, and the formulation of research questions or hypotheses. It is here that the researcher delineates the scope and boundaries of the inquiry, drawing upon existing literature and theories. The empirical framework, conversely, pertains to the observational aspect of research. It involves the systematic collection of data from the real world, whether through surveys, experiments, or observations, to test the propositions laid out in the conceptual framework. This stage is grounded in the principle of verifiability, where phenomena must be observable and measurable. Finally, the analytical framework provides the structure for interpreting the collected data. It encompasses the methods and techniques used to process, analyze, and make sense of the empirical evidence. This can range from statistical analysis in quantitative research to thematic analysis in qualitative research. The ultimate goal of the analytical framework is to draw valid conclusions, assess the relationship between variables, and relate the findings back to the initial conceptual framework, thereby contributing to the body of scientific knowledge. The robust integration of these three frameworks is essential for ensuring the rigour, validity, and overall quality of social science research.

Based on the above source, attempt the following five questions.

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(B) Provide unlimited funding.
(C) Not request that the researcher engage in unethical behavior like altering results.
(D) Share the research findings with competitors.

234. In the logical framework of programme evaluation, what is the relationship between 'output' and 'outcome'?
(A) The delivery of outputs is expected to lead to the achievement of outcomes.
(B) They are the same thing.
(C) Outputs are the long-term impacts, and outcomes are the immediate products.
(D) Outcomes are the resources used to produce outputs.

235. Which of these is an example of 'vector' data in GIS?
(A) A satellite image of a forest.
(B) A digital elevation model.
(C) A grid showing temperature variation.
(D) A line representing a highway.

236. A 'frequency polygon' and a 'histogram' are both graphical representations of frequency distributions. A key difference is that a frequency polygon:
(A) Uses bars, while a histogram uses lines.
(B) Uses the midpoints of the class intervals for plotting.
(C) Can represent categorical data, while a histogram cannot.
(D) Is a type of circular chart.

237. The 'scientific method' of research is characterized by its reliance on:
(A) Subjective intuition and personal experience.
(B) Traditional beliefs and authority.
(C) Empirical evidence, logical reasoning, and systematic processes.
(D) Philosophical debate and argumentation.

238. A study's findings are considered to have high 'internal validity' when:
(A) Results can be generalized across different demographics.
(B) The study was conducted in a natural, real-world setting.
(C) The measurement tools used were consistently reliable.
(D) The researcher is certain the IV caused the DV change.

239. The most significant difference between probability sampling and non-probability sampling is that in probability sampling:
(A) Every unit in the population has a known, non-zero probability of being selected.
(B) The sample size is always large.
(C) The results are always accurate.
(D) It is easier and less expensive to conduct.

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240. Consider the following statements about research reporting and ethics:
I. Detailed report limitations.
II. Consent one-time.
III. Report structure clarity.
IV. Ethical code integrity.
V. Re-use without citation.
Which of the above statements are correct?
(A) I, II, and III only
(B) I, III, and IV only
(C) II, IV, and V only
(D) All are correct.

241. "Number of hospital beds per 1,000 population" is an indicator of:
(A) Quality of care
(B) Availability of health infrastructure
(C) Equity of services
(D) Health outcome

242. In GIS, which type of data represents a phenomenon with no clear boundaries that exists over a continuous surface, such as temperature or elevation?
(A) Continuous data
(B) Discrete data
(C) Vector data
(D) Polygon data

243. Consider the following two statements regarding types of research:
Statement I: Exploratory research is often a precursor to more structured, conclusive research.
Statement II: Action research is a cyclical process of planning, acting, observing, and reflecting.
(A) Both Statement I and Statement II are true.
(B) Both Statement I and Statement II are false.

202. The concept of "site" in geography focuses on:
(A) The internal, physical characteristics of a place (e.g., climate, soil, water supply).
(B) The location of a place relative to other places.
(C) The absolute coordinates on a map.
(D) The political and economic connections of a place.

203. Which statistical technique in spatial analysis is most analogous to traditional correlation and regression but is applied to spatially referenced data?
(A) Kriging and Interpolation
(B) Bar and line diagrams
(C) Moran's I index calculation
(D) Spatial correlation and regression

204. The difference between a true experiment and a quasi-experiment lies in the:
(A) Manipulation of the independent variable.
(B) Random assignment of subjects to groups.
(C) Use of a control group.
(D) Measurement of the dependent variable.

205. If a researcher wants to predict a binary outcome (e.g., pass/fail) from a set of continuous and/or categorical independent variables, the most suitable analysis technique would be:
(A) Linear regression
(B) Correlation analysis
(C) Logistic regression
(D) ANOVA

206. In which sampling method do the initial participants recommend or refer other potential participants?
(A) Quota sampling
(B) Purposive sampling
(C) Convenience sampling
(D) Snowball sampling

207. A well-written 'Interpretation of Results' section in a research report should go beyond merely stating the findings and:
(A) Explain findings, relate them to hypotheses, and compare with literature.
(B) Provide a comprehensive and detailed description of all raw data sets.
(C) List the specific names and identities of all research participants.
(D) Focus exclusively on results that reached statistical significance levels.

208. The main purpose of the HMIS (Health Management Information System) is to:
(A) Provide a platform for publishing research articles.
(B) Support decision-making in health programme management through routine data collection.
(C) Conduct large-scale population surveys like the NFHS.
(D) Finance the healthcare system.

209. In GIS, converting a raster image of a river into a line feature is a form of:
(A) Geocoding
(B) Vectorization
(C) Rasterization
(D) Projection

210. Consider the following statements regarding M&E and GIS concepts:
I. Framework outlines questions/methods.
II. Input indicator doctors available.
III. 'Geo-coding' assigns coordinates.
IV. Raster uses polygons.
V. 'Summative' at the beginning.
Which of the above statements are correct?
(A) I, II, and III only
(B) II, III, and IV only
(C) I, III, and V only
(D) I, II, and IV only

211. What is the fundamental purpose of social science research?
(A) To prove the researcher's personal beliefs.
(B) To generate income for academic institutions.
(C) To systematically understand, describe, predict, and explain social phenomena.
(D) To create complex statistical models without practical application.

212. A "panel study" is a powerful design for analyzing individual change over time, but it is highly susceptible to:
(A) Sampling error
(B) External validity issues
(C) The Hawthorne effect
(D) Participant attrition or drop-out

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251. Which framework is primarily concerned with the definition of terms and the formulation of hypotheses?
(A) The analytical framework
(B) The conceptual framework
(C) The empirical framework
(D) The observational framework

252. The principle of verifiability, requiring phenomena to be observable and measurable, is most central to which research framework?
(A) The empirical framework
(B) The theoretical framework
(C) The conceptual framework
(D) The analytical framework

253. What is the primary function of the analytical framework in social science research?
(A) To collect primary data from the real world.
(B) To define the scope and boundaries of the inquiry.
(C) To process, interpret, and draw conclusions from data.
(D) To draw upon existing literature and theories.

254. Based on the passage, the integration of the three frameworks primarily ensures which of the following?
(A) The speed and efficiency of data collection.
(B) The applicability of the research findings.
(C) The financial feasibility of the research project.
(D) The rigour, validity, and quality of the research.

255. A researcher using statistical techniques to examine the relationship between variables is operating within which framework?
(A) The empirical framework, as it involves data.
(B) The conceptual framework, as it tests a theory.
(C) The analytical framework, as it involves data interpretation.
(D) The hypothetical framework, as it relates to hypotheses.

Direction : Please read the following source carefully.

Within the domain of applied social science research, several distinct types of inquiry are employed to address specific practical needs. Action research is an iterative and participatory process designed to diagnose and solve an immediate problem within a specific context, often involving practitioners themselves as co-researchers. Its focus is on localized change and improvement. Operations research, originating from military and industrial applications, utilizes mathematical and statistical modeling to find optimal solutions for complex decision-making problems, such as improving the efficiency of a health service delivery system. Its core objective is optimization of processes and resource allocation. Formative research is developmental in nature; it is conducted during the planning and initial implementation phases of a programme or intervention. Its purpose is to gather information that will help shape and refine the programme, ensuring it is relevant, acceptable, and well-designed for the target audience. Finally, programme evaluation research is a systematic assessment of a completed or ongoing programme to judge its merit, worth, or significance. It seeks to determine whether a programme has achieved its intended outcomes and impacts, providing accountability and lessons for future initiatives. While all are applied, they differ significantly in their timing, purpose, and methodology, from the immediate problem-solving of action research to the summative judgment of evaluation research.
Based on the above source, attempt the following five questions.

256. A study that uses mathematical models to determine the most efficient distribution route for health supplies would be best classified as which type of research?
(A) Formative research
(B) Operations research
(C) Action research
(D) Programme evaluation research

257. Which type of research is characterized by its iterative, participatory nature and its focus on solving an immediate, localized problem?
(A) Operations research
(B) Formative research
(C) Programme evaluation research
(D) Action research

NODIA

allowing for the study of phenomena as they exist in reality.

8. (A) P-4, Q-3, R-1, S-2
Different research designs are distinguished by specific characteristics. True experimental studies are defined by the random assignment of subjects to groups, ensuring equivalence. Longitudinal studies involve repeated observations of the same subjects over time to track changes. Descriptive studies provide a single point description of a population at a specific time. Quasi-experimental studies are similar to experiments but lack random assignment, often using naturally occurring groups instead.

9. (C) Observation of subjects in their natural environment without intervention.
A true experimental study is characterized by the deliberate manipulation of an independent variable, the inclusion of a control group, and the random assignment of participants to different conditions. These elements are essential for establishing causal relationships. Simply observing subjects in their natural environment without any form of intervention or control is characteristic of observational or descriptive research rather than a rigorous experimental design aimed at testing hypotheses.

10. (A) Longitudinal study
A longitudinal study is a research design that involves repeated observations of the same variables or individuals over an extended period. This approach allows researchers to track changes, developments, and trends within the same group over years or even decades. By collecting data at multiple time points, it provides unique insights into temporal sequences and developmental processes that are not possible with single-point cross-sectional data collection methods.

11. (A) I, III, and IV only
Research designs serve various purposes. Panel studies follow the same individuals over time, while quasi-experimental designs include control groups but lack random assignment. Exploratory studies are used for poorly understood problems. However, reliability refers to consistency and stability rather than the accuracy of a measure, which is the definition of validity. Understanding these distinctions is crucial for selecting the appropriate methodology and ensuring the integrity of the research findings and conclusions.

12. (B) The accuracy of a measure in capturing its intended concept.
Validity in research design specifically refers to the accuracy and truthfulness of a measurement instrument or study. It assesses whether the research actually measures what it claims to measure, ensuring that the results represent the intended concepts. While reliability focuses on consistency, validity ensures that the findings are meaningful and applicable. This concept is fundamental for establishing the credibility and sound scientific basis of any research undertaking.

13. (C) Collects data from the exact same individuals at each wave of data collection.
While both panel and longitudinal studies involve tracking changes over time, a panel study is specifically characterized by collecting data from the exact same sample of individuals at every wave of data collection. This unique feature allows researchers to analyze individual-level changes and transitions with high precision. Other longitudinal designs might use different samples from the same population at different times, which only allows for tracking aggregate-level trends.

14. (B) II, III, and V only
Scientific research relies on diverse methods and measures for accuracy. Qualitative data collection, such as interviews and focus groups, provides depth of understanding. The odds ratio serves as a vital measure of association between binary variables in statistical analysis. Furthermore, ensuring high data quality in evaluation research is indispensable for making valid judgments about programme effectiveness. These elements collectively contribute to the robustness and reliability of conclusions drawn from complex social science investigations.

15. (A) Both Statement I and Statement II are true.
The distinction between true experimental and quasi-experimental research hinges on the random assignment of participants, which is essential for minimizing bias in true experiments. Additionally, measurement quality is assessed through reliability, which measures

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(D) An observational exploratory study

264. According to the passage, the primary strength of a panel study design is its ability to:
(A) Guarantee causal inference through manipulation.
(B) Explore topics about which little is known.
(C) Ensure the lowest possible research cost.
(D) Analyze individual-level change over time.

265. If a researcher investigates a new teaching method by applying it to one class and comparing the results to another class that receives standard teaching, without randomly assigning students to the classes, the design is:
(A) Quasi-experimental
(B) True experimental
(C) Descriptive
(D) Exploratory

Direction : Please read the following source carefully.

The credibility of research findings is fundamentally dependent on the concepts of reliability and validity within the research design. Reliability refers to the consistency, stability, and repeatability of a measurement or research study. A reliable instrument or procedure will produce similar results under consistent conditions. For instance, if a survey designed to measure life satisfaction yields drastically different scores for the same person when administered a day apart, its reliability would be questionable. Validity, on the other hand, concerns the accuracy of a measure—that is, whether it truly measures the concept it is intended to measure. A study can be reliable but not valid; for example, a miscalibrated scale might consistently give the wrong weight, making it reliable but invalid. In the context of research design, internal validity refers to the degree of confidence that the causal relationship being tested is trustworthy and not influenced by other factors or variables. External validity, or generalizability, refers to the extent to which the results of a study can be applied to other people, settings, or times. A major challenge in research design is balancing these two. Designs with high internal validity, such as tightly controlled laboratory experiments, may have limited external validity, while observational studies with high external validity may suffer from threats to internal validity due to confounding variables.

Based on the above source, attempt the following five questions.

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266. A researcher develops a questionnaire to measure anxiety. If the same individuals complete the questionnaire on two separate occasions and their scores are highly consistent, the questionnaire is said to have high:
(A) Internal validity
(B) Reliability
(C) External validity
(D) Generalizability

267. According to the passage, which statement best describes the relationship between reliability and validity?
(A) A measure must be valid to be reliable.
(B) A measure can be reliable without being valid.
(C) Reliability and validity are identical concepts.
(D) A measure that is not reliable can still be valid.

268. The extent to which the findings of a study conducted on university students can be applied to the general adult population is a question of:
(A) External validity
(B) Internal validity
(C) Measurement reliability
(D) Procedural consistency

269. A tightly controlled laboratory experiment is most likely to be high in which of the following?
(A) External validity, due to its real-world setting.
(B) Non-sampling error, due to its artificiality.
(C) Internal validity, due to control over confounding variables.
(D) Both internal and external validity simultaneously.

270. A study claims that a new drug causes a reduction in blood pressure. The degree to which we can be confident that the drug, and not some other factor, is responsible for this effect refers to the study's:
(A) Reliability
(B) Generalizability
(C) External validity

258. A health organization is planning a new adolescent health campaign and conducts a series of focus groups with teenagers to understand their preferences and communication styles. This is a classic example of:
(A) Formative research, as it informs programme design.
(B) Programme evaluation research, as it assesses a need.
(C) Operations research, as it optimizes communication.
(D) Action research, as it involves the target group.

259. What is the primary distinction between formative research and programme evaluation research as described in the passage?
(A) Formative research is quantitative, while evaluation is qualitative.
(B) Formative research focuses on optimization, while evaluation focuses on immediate problems.
(C) Formative research is conducted to shape a programme, while evaluation assesses its outcomes.
(D) Formative research is theoretical, while evaluation is strictly applied.

260. A researcher systematically assesses whether a five-year-long national nutrition programme successfully reduced child stunting rates. This inquiry is an example of:
(A) Programme evaluation research
(B) Formative research
(C) Action research
(D) Operations research

Direction : Please read the following source carefully.

Research design provides the blueprint for conducting a study, with a fundamental distinction made between observational and experimental approaches. Observational studies involve researchers observing subjects and measuring variables of interest without assigning treatments or interventions. These can be descriptive, aiming to systematically describe a population, situation, or phenomenon, or exploratory, designed to investigate a topic about which little is known. In contrast, experimental studies involve the manipulation of an independent variable to observe its effect on a dependent variable. The gold standard is the true experimental study, which is characterized by the random assignment of subjects to different treatment groups, allowing for strong causal inferences. When random assignment is not feasible or ethical, a quasi-experimental study may be employed, which lacks randomization but includes a control or comparison group. To study phenomena over time, longitudinal designs are used. A key longitudinal approach is the panel study design, where data is collected from the same group of individuals (the panel) at two or more points in time. This design is particularly powerful for analyzing individual-level change, understanding developmental trends, and establishing temporal order between variables, which is a crucial component for inferring causality. The choice of design depends critically on the research question, ethical considerations, and logistical constraints.

Based on the above source, attempt the following five questions.

261. What is the defining characteristic that distinguishes a true experimental study from a quasi-experimental study?
(A) The presence of a control group.
(B) The collection of data over time.
(C) The manipulation of an independent variable.
(D) The random assignment of subjects to groups.

262. A researcher surveys a group of first-year university students about their study habits and then surveys the exact same group of students in their final year to assess changes. This is an example of a:
(A) Descriptive study
(B) Panel study design
(C) True experimental study
(D) Quasi-experimental study

263. A study that aims to describe the prevalence of a specific health condition in a population without any intervention from the researcher is best classified as:
(A) A quasi-experimental study
(B) An experimental study
(C) An observational descriptive study

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or evidence. In population data analysis, this can be used to refine risk assessments or diagnostic probabilities. Beyond general principles, specific probability distributions are applied to model different types of data. The Binomial distribution is used for data where there are only two possible discrete outcomes for each trial (e.g., success/ failure, yes/no), such as the number of children in a sample who have been vaccinated. The Exponential distribution is often applied in survival analysis to model the time until a specific event occurs, such as the time from diagnosis to death. Perhaps most ubiquitously, the Normal distribution, with its characteristic bell shape, serves as a cornerstone for statistical inference. Many statistical tests assume normality, and the Central Limit Theorem states that the distribution of sample means will tend to be normal, even if the underlying population distribution is not, which justifies its widespread application.

Based on the above source, attempt the following five questions.

276. A researcher wants to model the number of 'heads' obtained in 100 coin flips. Which probability distribution would be most appropriate for this scenario?
(A) Binomial distribution
(B) Normal distribution
(C) Exponential distribution
(D) Bayesian distribution

277. What is the primary application of the Exponential distribution as described in the passage?
(A) To model data with two possible outcomes.
(B) To update the probability of a hypothesis.
(C) To describe the distribution of sample means.
(D) To model the time until a specific event occurs.

278. Bayes' Theorem is a concept that allows a researcher to:
(A) Assume that all data follows a bell-shaped curve.
(B) Revise the probability of a hypothesis given new evidence.
(C) Calculate the time until an event happens.
(D) Model discrete outcomes with only two possibilities.

279. The widespread application of the Normal distribution in statistical inference is largely justified by:
(A) The Addition Rule of probability.
(B) Bayes' Theorem.
(C) The Central Limit Theorem.
(D) The properties of the Exponential distribution.

280. An analysis of the number of households in a village that either use or do not use modern contraception would involve data suitable for which distribution?
(A) Exponential distribution
(B) Normal distribution
(C) Continuous distribution
(D) Binomial distribution

Direction : Please read the following source carefully.

NODIA

The process of statistical inference involves using sample data to draw conclusions about a larger population. This process is structured around the formulation and testing of a statistical hypothesis, which is a statement about a population parameter. Typically, this involves a null hypothesis (H_0), which represents a statement of no effect or no difference, and an alternative hypothesis (H_1), which represents the presence of an effect or difference. To test the hypothesis, researchers examine relationships between variables. Correlation measures the strength and direction of a linear relationship between two continuous variables, while association is a broader term for any relationship between two variables. Regression analysis goes a step further by modeling this relationship, allowing for prediction. After analysis, the p-value is calculated. The p-value, or level of significance, is the probability of obtaining the observed results, or more extreme results, if the null hypothesis were true. A small p-value (typically < 0.05) suggests that the observed data is unlikely under the null hypothesis, leading to its rejection. Complementing the p-value is the confidence interval, which provides a range of plausible values for the population parameter. A 95% confidence interval, for instance, means that if the study were repeated many times, 95% of the calculated intervals would contain the true population parameter.

Based on the above source, attempt the following

five questions.

281. A researcher states that "there is no difference in the average test scores between Group A and Group B." This statement is an example of a(n):
(A) Null hypothesis
(B) Alternative hypothesis
(C) Research question
(D) Confidence interval

282. What does a p-value represent in hypothesis testing?
(A) The probability that the alternative hypothesis is true.
(B) The probability of observing the data if the null hypothesis is true.
(C) The estimated range of the true population parameter.
(D) The strength and direction of a linear relationship.

283. Which analytical concept allows a researcher not only to measure the relationship between variables but also to model it for predictive purposes?
(A) Correlation
(B) Regression analysis
(C) Association
(D) Confidence interval

284. A research report states that the 95% confidence interval for the mean height of a population is [165 cm, 175 cm]. What is the correct interpretation of this?
(A) It is a plausible range for the true population mean height.
(B) There is a 95% probability that the true mean height is between 165 cm and 175 cm.
(C) 95% of the individuals in the population have a height between 165 cm and 175 cm.
(D) The sample mean is exactly in the middle of 165 cm and 175 cm.

285. A researcher finds a strong positive correlation between ice cream sales and crime rates. This statistical finding primarily indicates:
(A) A causal relationship where ice cream causes crime.
(B) The probability of the finding occurring by chance.
(C) The strength and direction of a linear relationship.
(D) A range of plausible values for the crime rate.

Direction : Please read the following source carefully.

Sampling is the fundamental process of selecting a subset of individuals from within a statistical population to estimate characteristics of the whole population. The process begins with defining the sampling unit, which is the basic element being sampled (e.g., a person, a household). A complete list of all these units constitutes the sampling frame, from which the sample is drawn according to a specific sampling design. An inherent aspect of sampling is sampling error, which is the discrepancy between a sample statistic and the true population parameter that arises due to random chance in the selection process. This can be quantified by the standard error. In contrast, non-sampling errors are systematic errors that can occur at any stage of the research, such as from a faulty sampling frame, non-response, or measurement mistakes, and they are not reduced by increasing sample size. Several probability sampling methods ensure that each unit has a known chance of selection. Simple random sampling gives every unit an equal chance. Stratified random sampling involves dividing the population into homogeneous subgroups (strata) and sampling from each. Systematic random sampling selects units at a regular interval from a list. Cluster sampling involves dividing the population into groups (clusters), randomly selecting some clusters, and then sampling all or some units within the selected clusters.

Based on the above source, attempt the following five questions.

286. What is the term for a complete list of all the basic elements from which a sample is drawn?
(A) Sampling unit
(B) Sampling design
(C) Sample statistic
(D) Sampling frame

287. A researcher divides a population of students into three groups based on their academic year (first, second, final) and then draws a random sample from each group. This technique is called:

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(A) Cluster sampling
(B) Simple random sampling
(C) Stratified random sampling
(D) Systematic random sampling

288. Which type of error is due to random chance in the selection process and can be quantified by the standard error?
(A) Non-sampling error
(B) Sampling error
(C) Systematic error
(D) Measurement error

289. A researcher obtains a list of 1000 employees, chooses a random starting point at employee #7, and then selects every 10th employee thereafter (17th, 27th, 37th, etc.). This is an example of:
(A) Simple random sampling
(B) Cluster sampling
(C) Stratified random sampling
(D) Systematic random sampling

290. Unlike sampling error, non-sampling error is characterized by which of the following?
(A) It is a systematic error that can occur during data collection or processing.
(B) It arises purely from the random selection of units.
(C) It can be reduced by increasing the sample size.
(D) It is quantified by the standard error of the mean.

Direction : Please read the following source carefully.

The framework for managing and assessing health programmes rests on the distinct but related concepts of monitoring and evaluation. Monitoring is a continuous management function that involves the routine tracking of programme implementation against set targets. It focuses on inputs, processes, and outputs, asking "Are we doing what we planned to do?". A critical tool for this is the Health Management Information System (HMIS), which systematically collects, processes, and reports service-level data. From HMIS, one can derive key indicators such as input indicators (e.g., number of health workers trained, funds disbursed), process indicators (e.g., number of clinics held), and output indicators (e.g., number of children immunized, number of antenatal care visits). These service statistics are invaluable for day-to-day management and making timely adjustments. However, HMIS data has limitations, often related to data quality, completeness, and a lack of population-based denominators. Evaluation, by contrast, is a more periodic and in-depth assessment. It seeks to determine a programme's overall effectiveness, impact, and relevance, asking "Did the programme make a difference?". While monitoring tracks progress, evaluation judges worth. Evaluation often requires more rigorous methods, including surveys, to assess higher-level indicators like outcomes (e.g., changes in health-seeking behavior) and impact (e.g., reduction in mortality rates).

Based on the above source, attempt the following five questions.

291. Which of the following questions is most characteristic of programme monitoring?
(A) Did the programme cause a reduction in disease prevalence?
(B) Was the programme cost-effective compared to other alternatives?
(C) How many training sessions for health workers were conducted last month?
(D) What was the long-term impact of the programme on the community's health status?

292. The number of children who received a full course of immunization through a programme is an example of what type of indicator?
(A) Output indicator
(B) Input indicator
(C) Process indicator
(D) Impact indicator

293. According to the passage, what is the primary difference between monitoring and evaluation?
(A) Monitoring uses qualitative data, while evaluation uses quantitative data.
(B) Monitoring is done by external agencies, while evaluation is done by programme staff.
(C) Monitoring focuses on impact, while evaluation focuses on inputs and processes.
(D) Monitoring is a continuous tracking of activities, while evaluation is a periodic assessment of effectiveness.

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294. A Health Management Information System (HMIS) is described as a critical tool primarily for which activity?
(A) Conducting large-scale population surveys for impact assessment.
(B) The routine tracking of service statistics for programme monitoring.
(C) In-depth qualitative studies on programme relevance.
(D) Determining the cost-effectiveness of a national health policy.

295. An indicator measuring the amount of money disbursed for a health programme would be classified as an:
(A) Output indicator
(B) Outcome indicator
(C) Input indicator
(D) Impact indicator

Direction : Please read the following source carefully.

The integration of Geographic Information Systems (GIS) into population studies is built upon core spatial concepts. A fundamental distinction is between site, which refers to the physical characteristics of a place (e.g., topography, soil quality), and location, which defines a place's position relative to other phenomena. The concept of scale is critical, as patterns and relationships can appear different at local, regional, or global scales. A central challenge in cartography is representing the spherical surface of the Earth on a flat map, a process managed through map projections, which inevitably introduce some form of distortion. The power of GIS lies in its ability to manage and analyze geographically referenced data. This data can be broadly classified into two types: raster and vector. Vector data represents discrete geographic features using points (e.g., a hospital), lines (e.g., a river or road), and polygons (e.g., a district boundary). Raster data, in contrast, uses a grid of cells (or pixels) to represent continuous phenomena, such as elevation, temperature, or satellite imagery. The foundational process that enables GIS analysis is geo-referencing (or geo-coding), which involves assigning geographic coordinates (like latitude and longitude) to data, such as a list of patient addresses. This allows disparate datasets to be layered and analyzed together based on their shared spatial location.

Based on the above source, attempt the following five questions.

296. Representing a city's administrative boundaries as a set of closed shapes in a GIS would be an example of using which data type?
(A) Raster data
(B) Point data
(C) Line data
(D) Vector data (polygons)

297. The process of assigning latitude and longitude coordinates to a list of street addresses is known as:
(A) Geo-referencing
(B) Map projection
(C) Spatial interpolation
(D) Site analysis

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298. According to the passage, what is the key difference between raster and vector data?
(A) Raster data represents discrete features, while vector data represents continuous phenomena.
(B) Raster uses a grid of cells, while vector uses points, lines, and polygons.
(C) Raster data is used for map projections, while vector data is not.
(D) Raster data describes a site, while vector data describes a location.

299. A satellite image showing variations in land surface temperature across a region would be best represented as:
(A) Vector data
(B) Raster data
(C) Point data
(D) Polygon data

300. The concept that defines a place's position in relation to other objects or places is referred to as:
(A) Location
(B) Site
(C) Scale
(D) Projection

ANSWERS

1. (B) The system of concepts and theories that supports a research study.
The conceptual framework serves as the logical structure of a research study, integrating various theories, beliefs, and expectations. It provides a cohesive system of concepts that guides the researcher in defining the problem and interpreting results. This framework acts as a map, illustrating the relationships between different variables and ensuring that the investigation remains theoretically grounded and focused on its core objectives throughout the investigation process.

2. (A) Observation, experience, and verifiable evidence.
Empirical research is a systematic approach to investigation that relies heavily on direct or indirect observation and experience. It emphasizes the collection of verifiable evidence from the physical world rather than relying on philosophical speculation or purely logical deduction. This method ensures that conclusions are based on data that can be measured and tested, providing a solid foundation for building scientific knowledge in social sciences.

3. (A) Both Statement I and Statement II are true.
Action research focuses on finding immediate solutions to practical problems within specific organizational or community settings, often involving active participation by practitioners. Simultaneously, operations research utilizes advanced mathematical and statistical modeling techniques to optimize complex decision-making processes and improve system efficiency. Both methodologies represent applied approaches to research, addressing real-world challenges through systematic inquiry and data-driven strategies to enhance performance and solve localized or systemic issues effectively.

4. (D) Formative research
Formative research is a critical evaluative step conducted during the early stages of programme development or before full implementation. Its primary goal is to assess the feasibility, appropriateness, and potential effectiveness of proposed interventions. By gathering feedback from the target audience and stakeholders, researchers can identify potential barriers and refine programme components, ensuring that the final roll-out is well-designed, relevant, and likely to succeed.

5. (A) Both A and R are true and R is the correct explanation of A.
Programme evaluation research serves as a systematic method for assessing the design, implementation, and overall impact of social interventions. It is essential for determining whether a programme is meeting its stated objectives and utilizing resources efficiently. By providing evidence-based insights into outcomes, this type of research helps policymakers and managers make informed decisions regarding the continuation, modification, or expansion of specific programmes to maximize social benefits.

6. (B) A Descriptive Study
A descriptive study focuses on accurately portraying the characteristics of a specific population or phenomenon as they naturally occur. Unlike experimental designs, it does not involve the manipulation of independent variables or the establishment of cause-and-effect relationships. Instead, it seeks to provide a comprehensive snapshot of "what is" by collecting data on various attributes, providing essential baseline information for future analytical or experimental research projects.

7. (D) The researcher actively manipulates the independent variable.
Observational studies are defined by the lack of researcher interference in the natural setting of the subjects. In these designs, the investigator simply observes and records behaviors or outcomes without actively manipulating any independent variables or assigning participants to specific treatment groups. This approach is particularly valuable when experimental methods are deemed unethical or impractical,

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(D) Internal validity

Direction : Please read the following source carefully.

In evaluation research, the choice of data collection methods hinges on the research questions, with a primary distinction between quantitative and qualitative approaches. Quantitative methods involve collecting numerical data that can be subjected to statistical analysis. These methods are ideal for measuring the extent of a phenomenon, testing hypotheses, and assessing outcomes in a population. The quality of quantitative data is paramount, as it directly impacts the credibility of an evaluation's findings. Key statistical measures used in population health research to quantify association include the odds ratio (OR) and relative risk (RR). The odds ratio is typically calculated in case-control studies and represents the odds that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure. Relative risk, or risk ratio, is calculated in cohort studies and compares the probability of an outcome occurring in an exposed group to the probability of it occurring in a non-exposed group. In contrast, qualitative methods collect non-numerical data, such as text from interviews or observations, to explore meanings, experiences, and processes in depth. While quantitative methods answer "how many" or "how much," qualitative methods address the "why" and "how," providing rich, contextual understanding that is often essential for interpreting quantitative results in evaluation research.

Based on the above source, attempt the following five questions.

271. Which of the following research questions is best answered using quantitative methods as described in the passage?
(A) Why do women in a particular village prefer traditional birth attendants?
(B) What is the lived experience of patients with a chronic disease?
(C) What is the percentage reduction in infection rates after an intervention?
(D) How do community leaders perceive the new health policy?

272. The odds ratio (OR) is a measure of association typically calculated in which type of study design?
(A) Cohort studies
(B) Case-control studies
(C) Qualitative interviews
(D) Experimental trials

273. According to the passage, what is the fundamental difference between relative risk (RR) and odds ratio (OR)?
(A) RR is used for qualitative data while OR is for quantitative data.
(B) RR measures the 'why' and 'how', while OR measures the 'how much'.
(C) RR is a measure of central tendency, while OR is a measure of dispersion.
(D) RR compares probabilities in cohort studies, while OR compares odds in case-control studies.

274. A study finds that smokers are twice as likely to develop a certain disease compared to non-smokers over a 10-year period. This finding, derived from a cohort study, represents a measure of:
(A) Relative risk
(B) Odds ratio
(C) Qualitative significance
(D) Statistical significance

275. The quality of data in evaluation research is highlighted as being paramount because it directly affects:
(A) The cost of the research project.
(B) The speed of data collection.
(C) The credibility of the evaluation's findings.
(D) The number of participants required.

NODIA

Direction : Please read the following source carefully.

The application of probability is foundational to the analysis of population data, enabling researchers to make inferences about a whole population based on a sample. The laws of probability, such as the addition and multiplication rules, provide the mathematical basis for these statistical procedures. A particularly powerful concept is Bayes' Theorem, which offers a formal method for updating the probability of a hypothesis based on the acquisition of new data

the consistency of results over time, and validity, which determines if the tool measures the intended concept accurately. Both concepts are fundamental to research design, ensuring that findings are both stable across repetitions and truthful in representation.

16. (A) Both A and R are true and R is the correct explanation of A.
In evaluation research, the quality of data is the primary concern because the conclusions regarding a programme's success or failure depend entirely on the evidence collected. If the data is inaccurate or unreliable, any subsequent judgments about the programme's impact will be flawed. Ensuring high data quality involves rigorous collection methods and validation processes, which are necessary to provide stakeholders with a credible basis for making critical policy decisions.

17. (B) Odds Ratio
The odds ratio is a statistical measure used in data analysis to compare the likelihood of an event occurring in one group relative to another. It is calculated by taking the ratio of the odds of the event in the exposed group to the odds of the event in the unexposed group. This measure is particularly useful in case-control studies for identifying associations between specific risk factors and outcomes.

18. (A) IV, II, III, I, V
A typical social science research project follows a systematic chronological sequence. The process begins with defining the research problem, followed by the formulation of testable hypotheses. Once the theoretical groundwork is laid, the researcher proceeds to data collection and subsequent analysis and interpretation of the findings. Finally, the entire process and results are documented in a comprehensive research report, ensuring that the study is transparent, replicable, and professionally communicated.

19. (C) The ratio of the probability of an event occurring in an exposed group to the probability of the event occurring in a non-exposed group.
Relative Risk is a fundamental statistical concept used to compare the probability of an event occurring in two different groups. It is calculated as the ratio of the incidence of the event in the group exposed to a specific factor to the incidence of the event in the unexposed group. This measure helps researchers quantify the strength of association between exposure and outcome, particularly in prospective cohort studies and clinical trials.

20. (B) P-4, Q-1, R-3, S-2
Statistical analysis involves various tools with distinct functions. The p-value represents the probability of observing results given that the null hypothesis is true. A confidence interval provides a range of plausible values for a population parameter. Correlation measures the strength of a linear relationship between variables. Logistic regression is a specialized modeling technique used for binary outcomes. Understanding these concepts is essential for interpreting data and drawing valid scientific inferences.

21. (C) To quantify uncertainty when making population inferences from samples.
In population data analysis, probability provides the mathematical framework necessary to quantify uncertainty when making inferences about a large population based on a smaller sample. Since it is often impossible to survey every individual, researchers use probability to estimate the likelihood that their sample findings accurately reflect the true population parameters. This approach allows for scientifically sound conclusions while acknowledging and measuring the potential for sampling variability and error.

22. (B) Updating the probability of a hypothesis based on new evidence.
Bayes' Theorem is a powerful mathematical formula used in statistics to update the probability of a hypothesis as new evidence or information becomes available. It combines prior knowledge with current data to produce a more refined posterior probability. This approach is widely applied in various fields, including medicine and artificial intelligence, where adjusting beliefs based on emerging observations is critical for accurate prediction, diagnosis, and decision-making processes.

23. (D) Binomial Distribution
The Binomial distribution is the most appropriate model for analyzing situations involving a fixed number of independent trials, where each trial

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39. (D) The personal preferences of the researcher.
Determining the appropriate sample size for a study involves several objective statistical factors, including the desired level of confidence, the acceptable margin of error, and the estimated variability of the characteristic within the population. These factors ensure that the study has sufficient power to detect meaningful effects. Personal preferences or convenience for the researcher should not influence this calculation, as doing so would compromise the scientific validity and representativeness of the resulting data.

40. (B) I, II, and III only
Different sampling methods offer various advantages for research. Simple random sampling gives every member an equal chance, while stratified sampling ensures subgroups are represented. Cluster sampling is highly efficient for geographically dispersed populations. However, purposive sampling is a non-probability technique where participants are selected based on the researcher's judgment rather than random chance. Therefore, only the first three statements accurately describe probability sampling techniques used to ensure representativeness and minimize potential selection bias.

41. (C) Stratified random sampling
Stratified random sampling is a probability technique where the population is divided into distinct, non-overlapping groups called strata based on specific characteristics like age or income. A random sample is then drawn from each stratum. This method ensures that all identified subgroups are adequately represented in the final sample, which can significantly improve the precision of the overall population estimates compared to simple random sampling, especially when subgroups differ significantly.

42. (A) Systematic random sampling
Systematic random sampling is a method where researchers select participants at regular intervals from a list of the entire population. The process typically begins with a random starting point, after which every nth individual is chosen. This technique is often easier to implement than simple random sampling and ensures an even spread across the list. It is highly effective provided the list itself does not contain hidden patterns that coincide with the sampling interval.

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43. (C) I, II, III, and V only
Sampling involves complex choices to ensure study validity. Cluster sampling utilizes group selection, while purposive sampling relies on researcher judgment for specific needs. Multi-stage sampling combines several methods for practical large-scale data collection. Furthermore, the design effect is a vital statistic for comparing the precision of complex samples to simple random samples. However, simple random sampling is not always the most cost-effective, particularly when dealing with large or geographically dispersed populations requiring extensive travel.

44. (B) Multi-stage sampling
Multi-stage sampling is a complex probability design used for large-scale surveys where a single list of the entire population is unavailable. It involves selecting samples in successive stages, beginning with large primary units like districts, then moving to smaller units like villages or households. This hierarchical approach is highly cost-effective and practical for national-level research, as it concentrates data collection efforts within specific geographic clusters rather than across an entire country.

45. (A) Both A and R are true and R is the correct explanation of A.
Stratified random sampling is widely recognized for its ability to produce more representative samples and smaller sampling errors. By dividing the population into homogeneous subgroups and sampling from each, it ensures that no critical segment is accidentally over- or under-represented. This reduction in variability within the sample directly leads to more precise population estimates. The reasoning correctly explains how controlling for subgroup representation enhances the overall quality and reliability of the research data.

46. (D) A measure of how sampling design affects precision relative to SRS.
The design effect is a statistical measure used in survey methodology to quantify the impact of a complex sampling design on the precision of estimates. It compares the variance of a

31. (A) 95% of similarly constructed intervals will contain the true mean.
A 95% confidence interval is a range derived from sample data that is likely to contain the true population parameter. The correct interpretation is that if the same sampling procedure were repeated many times, 95% of the resulting intervals would contain the true population mean. It does not mean there is a 95% probability for any single interval to contain the mean, but rather describes the reliability of the estimation process itself.

32. (B) Predicting whether a customer will purchase a product (yes/no) based on their age and income.
Logistic regression is specifically designed for scenarios where the dependent variable is binary, meaning it has only two possible outcomes. Predicting whether a customer will purchase a product, which can be answered as "yes" or "no," is a classic application of this technique. By analyzing predictors like age and income, the model estimates the probability of the purchase event, making it the most appropriate tool for this type of classification problem.

33. (B) A list of all the items or individuals from which a sample is drawn.
In research methodology, a sampling frame is a comprehensive list or database of all individuals or items within the target population from which a sample can be drawn. It serves as the operational foundation for the sampling process, ensuring that every member of the population has a chance of being selected. An accurate and up-to-date frame is essential for achieving a representative sample and minimizing potential selection bias in the study.

34. (A) The primary element or group of elements eligible for selection in the sample.
A sampling unit is the basic element or group of elements that is subject to selection during the sampling process. Depending on the study design, a sampling unit could be an individual person, a household, a school, or a geographic area. It represents the smallest entity that can be chosen from the sampling frame to be included in the final sample, serving as the fundamental building block of the research population.

35. (C) P-4, Q-3, R-2, S-1
Key terms in sampling refer to different aspects of the selection process and potential errors. A sampling frame is a comprehensive list of the population units. Sampling error is the natural discrepancy that occurs by chance when using a sample instead of the whole population. Standard error is a measure used to estimate the accuracy of a statistic. Non-sampling errors arise from human mistakes, such as poor questionnaire design or data entry errors.

36. (D) Sampling error
Sampling error is the natural variability that occurs simply because a researcher collects data from a subset of the population rather than the entire group. It is the difference between the sample statistic and the true population parameter that arises purely by chance. Unlike non-sampling errors, which result from mistakes in design or execution, sampling error is an inherent part of the sampling process that can be minimized but not eliminated.

37. (C) The random chance that a sample is not perfectly representative of the population.
Non-sampling errors are those that occur during data collection and processing, independent of the act of sampling itself. Common sources include poorly designed questionnaires, data entry mistakes, and participant non-response. In contrast, the random chance that a sample is not perfectly representative is specifically defined as sampling error. While sampling error relates to the selection process, non-sampling errors are related to the quality of measurement and administrative procedures throughout the research project.

38. (B) The variability of the statistic from sample to sample.
The standard error of a statistic provides a measure of how much that statistic is expected to vary across different samples drawn from the same population. It quantifies the precision of the sample estimate. A smaller standard error indicates that the sample statistic is likely to be very close to the true population parameter, while a larger value suggests greater uncertainty and variability in the estimates produced by the sampling process.

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results in one of only two possible outcomes, such as success or failure. It calculates the probability of obtaining a specific number of successes across these trials. This discrete probability distribution is essential in various fields for modeling binary events, ranging from quality control processes to clinical trial outcomes.

24. (A) The mean, median, and mode are all equal.
The Normal distribution, frequently called the bell curve, is a continuous probability distribution characterized by its symmetrical shape. One of its most defining properties is that the mean, median, and mode are all located at the same central point. This symmetry implies that data points are distributed equally on both sides of the center, with most observations clustering near the mean and tapering off as they move toward the extremes.

25. (B) I, II, and III only
Probability distributions have distinct characteristics suited for different types of data. The Binomial distribution is a discrete model for binary trials, while the Exponential distribution models time between events. The Normal distribution is uniquely defined by its mean and standard deviation. However, in a standard normal distribution, approximately 68% of data falls within one standard deviation of the mean, whereas 95% falls within approximately two standard deviations, making the fourth statement incorrect.

26. (A) An assumption or a statement about a population parameter, which may or may not be true.
A statistical hypothesis is a formal assumption or statement regarding a specific population parameter that is subject to verification through data analysis. It represents a tentative proposition that researchers test using sample data to determine if there is enough evidence to reject or fail to reject it. This process is central to scientific inquiry, allowing researchers to make objective, data-driven inferences about broader populations based on observed sample statistics.

27. (D) Measure the strength and direction of the linear relationship between two variables.
Correlation is a statistical technique used to measure the strength and direction of the linear relationship between two continuous variables. It provides a numerical value, typically the correlation coefficient, ranging from -1 to +1. This measure helps researchers determine how closely changes in one variable are associated with changes in another. However, correlation alone does not imply causation, as it only identifies patterns of association without establishing a cause-and-effect link.

28. (B) II, IV, and V only
Statistical reasoning involves several key principles. A confidence interval offers a range of plausible values for population parameters, while association is a broad term encompassing relationships between various variable types. Rejection of the null hypothesis occurs when the p-value is below the significance level. However, a p-value represents the probability of observing data under the null hypothesis, not the probability that the hypothesis is true. Additionally, logistic regression requires a binary dependent variable.

29. (C) The probability of observing a result as extreme as, or more extreme than, the one observed, if the null hypothesis is true.
The level of significance, or p-value, in hypothesis testing represents the probability of obtaining a result as extreme as, or more extreme than, the one actually observed, assuming the null hypothesis is true. It serves as a threshold for determining statistical significance. If the p-value is very low, it indicates that the observed data is unlikely under the null hypothesis, leading researchers to reject it in favor of the alternative hypothesis.

30. (A) Both A and R are true and R is the correct explanation of A.
Logistic regression is the preferred analytical method for modeling outcomes that are binary or categorical in nature. This technique is highly effective because it models the probability of a specific outcome occurring rather than a continuous value. Furthermore, the results are expressed as odds ratios, which provide a clear and intuitive interpretation of how various predictors influence the likelihood of the event. This makes the reasoning a correct and complete explanation for the assertion.

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statistic under the chosen design to the variance that would have been obtained using a simple random sample of the same size. This value helps researchers adjust their sample size and standard errors to account for the loss or gain in efficiency.

47. (A) Defining the research problem.
The research process begins with the critical step of defining the research problem. This involves identifying a specific issue, question, or gap in knowledge that the study intends to address. Clearly articulating the problem is essential as it guides all subsequent phases, including the formulation of hypotheses, the selection of the research design, and the choice of data collection methods. Without a well-defined problem, the entire research effort lacks focus and direction.

48. (B) Detailed plan for data analysis.
A well-defined research problem must clearly state the variables or concepts of interest, specify the target population, and outline the scope and boundaries of the study. These elements provide the necessary focus for the investigation. While a plan for data analysis is a vital part of the overall research proposal, it is not a component of the problem definition itself; rather, it is a subsequent step that depends on the problem.

49. (B) A testable statement that proposes a possible relationship between variables.
A research hypothesis is a specific, testable statement that proposes a tentative relationship between two or more variables. It is derived from existing theory or observations and serves as a guide for the investigation. Unlike a proven fact, a hypothesis is an educated guess that the researcher seeks to support or refute through empirical testing. It provides a clear direction for data collection and analysis, focusing the study on specific measurable outcomes.

50. (A) P-3, Q-4, R-1, S-2
A research report is organized into logical sections to ensure clear communication of findings. The introduction presents the problem statement, while the literature review provides necessary theoretical background. The methodology section details the procedures used for data collection and analysis. Finally, the conclusion offers a summary of findings and actionable recommendations. This standardized structure allows readers to easily locate specific information and assess the quality and relevance of the research conducted.

51. (C) A brief report provides a concise summary, whereas a detailed report is comprehensive.
The primary distinction between a brief research report and a detailed one lies in the depth and comprehensiveness of the information provided. A brief report is designed to offer a concise summary of key findings and recommendations, often intended for busy decision-makers. In contrast, a detailed report is a comprehensive document that includes thorough descriptions of the methodology, theoretical framework, data analysis, and extensive discussions of results, intended for academic or professional scrutiny.

52. (D) Discuss findings in the context of research questions and literature.
The 'Interpretations of Results' section is where the researcher gives meaning to the statistical findings. This section should move beyond just presenting numbers to discuss what the results actually imply in the context of the original research questions and existing literature. It involves explaining whether the hypotheses were supported, identifying patterns, and exploring the implications of the findings, thereby providing a narrative that connects the data to the broader field of study.

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53. (C) Maintaining objectivity and avoiding bias in data collection, analysis, and reporting.
A core principle of the Researcher's Ethical code is the commitment to maintaining objectivity and avoiding bias throughout the entire research process. This includes being honest in data collection, transparent in analysis, and neutral in reporting findings, even if the results do not support the researcher's or the client's expectations. Upholding these standards is essential for ensuring the integrity, credibility, and social value of scientific research and for maintaining public trust.

54. (B) Non-maleficence
The ethical principle of non-maleficence requires researchers to ensure that their participants are not subjected to any unnecessary harm, discomfort, or undue stress during the study. This involves identifying potential risks and taking

and final outcomes, providing a comprehensive assessment.

69. (C) The long-term, sustained changes in the health status of the population.
An impact indicator is designed to measure the long-term, sustained changes in the health status or well-being of a population that are attributable to a programme. These indicators reflect the ultimate goals of an intervention, such as reductions in disease prevalence or mortality rates. Because they measure broad social changes, impact indicators are often more difficult to collect and attribute solely to a single programme compared to more immediate output or outcome measures.

70. (A) P-4, Q-3, R-2, S-1
Programme monitoring and evaluation use various indicator types. Input indicators represent resources like vaccine availability. Process indicators track activities, such as training workers. Outcome indicators measure intermediate results, like the percentage of the population immunized. Finally, impact indicators reflect long-term changes, such as a reduction in the mortality ratio. Mapping these examples to their corresponding levels in the results chain is essential for building a comprehensive framework for assessing programme performance and success.

71. (D) To collect population-based data on outcomes and impacts not in routine statistics.
In programme evaluation, surveys play a crucial role by collecting population-based data that routine systems like HMIS often cannot capture. They are essential for measuring outcomes and impacts at the community level, such as changes in health behaviors, knowledge, or long-term health status. While HMIS tracks service delivery at facilities, surveys provide a broader perspective by including individuals who may not be using the services, thereby offering a more comprehensive assessment of programme reach.

72. (A) the physical attributes of a place; the position relative to other places
In geography and GIS, the term 'site' refers to the specific, internal physical attributes of a place, such as its climate, topography, and soil quality. In contrast, 'location' refers to the position of a place in relation to its surroundings or other places, often called the relative location or situation. While site focuses on what is actually at the point, location describes where the point is situated within a broader spatial network or context.

73. (C) A method for representing the curved surface of the earth on a flat plane.
A map projection is a mathematical method used to represent the three-dimensional, curved surface of the Earth on a two-dimensional, flat plane. Because it is geometrically impossible to flatten a sphere without distortion, every projection involves some compromise in accuracy regarding shape, area, distance, or direction. Choosing the appropriate projection is critical in GIS and cartography to ensure that the map's properties align with its intended use and minimize relevant spatial distortions.

74. (A) Display the spatial pattern of a particular attribute, such as population density.
A thematic map is specifically designed to illustrate the spatial distribution and patterns of a particular subject or attribute, such as population density, climate zones, or land use. Unlike general-purpose maps that show a variety of physical and political features for navigation, thematic maps focus on a single theme to help viewers understand spatial relationships and trends within that specific data set. They are powerful tools for communicating complex geographic information and research findings.

75. (A) I and II only
Spatial data refers to information that identifies the geographic location and boundaries of features on Earth. In the provided list, the coordinates of a hospital and the boundaries of a district are clear examples of spatial data because they describe physical positions and areas in space. Other information, such as the name of a doctor or the number of beds, is considered non-spatial attribute data, which describes characteristics of the features rather than their location.

76. (B) Vector data
Vector data is the most appropriate model for representing geographic features with distinct, well-defined boundaries, such as roads, buildings, or political borders. This model uses geometric

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of an output. It reflects the immediate reach and service volume provided. Unlike inputs (budget) or impacts (mortality rates), outputs focus on the successfully completed tasks and services that the programme was designed to offer.

62. (A) Both A and R are true and R is the correct explanation of A.
The Health Management Information System (HMIS) is an indispensable tool for the daily monitoring of health programmes because it provides frequent and timely data on service delivery. This information covers the entire results chain from inputs to outputs, allowing managers to pinpoint bottlenecks in implementation as they occur. By using these routine statistics, managers can take immediate corrective actions, making the reasoning a perfect explanation for why HMIS is vital for effective day-to-day programme oversight.

63. (A) Outcome indicator
The acceptance or utilization rate of a service is classified as an outcome indicator. It goes beyond simply measuring what the programme provided (output) to measure whether the target population is actually using and benefiting from the service. This indicator reflects a change in behavior or status among the beneficiaries, serving as a critical measure of the programme's success in meeting the needs of the community and achieving its intended short-term objectives.

64. (B) It may suffer from issues of incompleteness, inaccuracy, and reporting biases.
A significant limitation of using Health Management Information System (HMIS) data for programme evaluation is its potential for poor data quality. Since these are routine service statistics, they may suffer from issues such as incomplete records, reporting inaccuracies, and systematic biases. These problems can compromise the reliability of the evaluation findings. Unlike carefully controlled surveys, HMIS data is subject to the administrative pressures and varying reporting standards of the facilities where it is generated.

65. (B) II, V, IV, I, III
The logical sequence of a programme's results chain begins with inputs, which are the resources invested. These lead to processes, the activities conducted using those resources. Processes then result in outputs, the immediate products or services delivered. Once outputs are utilized, they lead to outcomes, representing intermediate changes in behavior or status. Finally, these outcomes contribute to long-term impact, which signifies the broad, sustained changes in the overall population's health or well-being.

66. (A) The differences in service access and outcomes between different socioeconomic or geographical groups.
Evaluating equity in RMNCH+A services involves analyzing the distribution of health access and outcomes across different population segments. Researchers look for disparities based on factors such as socioeconomic status, geographic location, gender, or ethnicity. The goal is to determine whether the programme is reaching the most vulnerable and marginalized groups effectively. This analysis ensures that health improvements are shared fairly and that the programme is not inadvertently widening existing gaps in healthcare delivery and health status.

67. (C) Concurrent evaluation
Concurrent evaluation is conducted during the implementation phase of a programme. Its primary purpose is to provide ongoing feedback and insights that can be used to make immediate improvements to the programme's design or delivery. By assessing progress and identifying challenges in real-time, concurrent evaluation helps managers ensure that the project remains on track to achieve its objectives. It serves as a vital bridge between routine monitoring and final summative evaluation of overall impact.

68. (D) improve a programme; judge a programme's worth
Formative and summative evaluations serve different primary purposes within the programme lifecycle. Formative evaluation is typically conducted during the early stages to provide feedback for improving the programme's design and implementation. In contrast, summative evaluation is performed at the end or at major milestones to judge the overall worth, effectiveness, and impact of the intervention. While one focuses on development and refinement, the other focuses on accountability

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proactive steps to minimize them. Protecting the physical and psychological well-being of subjects is a fundamental responsibility, ensuring that the pursuit of knowledge does not come at the expense of the safety and dignity of the individuals involved.

55. (B) I, II, and III only
Research ethics encompass responsibilities toward clients, the scientific community, and respondents. Clients must respect confidentiality, while researchers must be transparent about study limitations. Obtaining informed consent is a critical ethical requirement for protecting respondents. However, fabricating data is a severe violation of scientific integrity and is never ethically permissible. Adhering to these codes ensures that research is conducted with honesty, respect, and accountability, ultimately preserving the validity and ethical standing of the work.

56. (A) Have been fully informed about the nature of the research and have voluntarily agreed to participate.
Informed consent is a fundamental ethical requirement meaning that research participants have been fully educated about the study's purpose, procedures, potential risks, and benefits. It ensures that individuals voluntarily agree to participate without any form of coercion. This process respects the autonomy of the respondents, allowing them to make a deliberate decision about their involvement. It is not about payment or educational level, but about transparency and the right to choose participation.

57. (C) Monitoring is continuous tracking, whereas evaluation is periodic assessment.
The primary difference between monitoring and evaluation lies in their timing and frequency. Monitoring is a continuous process of tracking programme activities and outputs to ensure implementation is on schedule. Evaluation, however, is a periodic assessment that examines the overall effectiveness, relevance, and impact of a programme at specific milestones. While monitoring provides real-time feedback for day-to-day management, evaluation offers deeper insights into whether the programme has achieved its broader long-term goals.

58. (A) I, II, and V only
Monitoring and evaluation are distinct yet complementary processes essential for programme management. Monitoring focuses on implementation as planned, while evaluation judges overall worth and effectiveness. Both are vital for evidence-based decision-making. However, concurrent evaluation occurs during implementation, not after, and monitoring often relies heavily on routine service statistics rather than just special surveys. Understanding these roles ensures that managers have the right information at the right time to improve programme performance and demonstrate accountability.

59. (D) Programme monitoring by providing routine service statistics.
The Health Management Information System (HMIS) is designed as a tool for routine programme monitoring. It collects and provides continuous service statistics on various health indicators, such as patient visits, immunizations, and facility resources. This data allows health managers to track programme performance in real-time, identify service delivery gaps, and make necessary adjustments. Unlike periodic evaluations or experimental trials, HMIS provides the steady stream of information needed for day-to-day operational management and decision-making.

60. (B) The resources used for the programme, such as funds, staff, and supplies.
An input indicator in programme monitoring specifically measures the resources allocated to and used by a programme. These resources include financial funds, personnel staff, equipment, and physical supplies necessary for implementation. By tracking inputs, managers can ensure that the project has the required support to carry out its activities. This is the first level of the results chain, focusing on what is being invested before any activities take place or results are achieved.

61. (C) The number of pregnant women who received at least three antenatal care check-ups.
An output indicator measures the direct products or services delivered as a result of programme activities. In a maternal health programme, the number of pregnant women who received at least three antenatal care check-ups is a clear example

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primitives—points, lines, and polygons—to describe the location and shape of these features. It is highly precise and efficient for network analysis and cartographic representation where accuracy in boundary definition is paramount. This makes it ideal for showing discrete objects rather than continuous surfaces like temperature or elevation.

77. (C) Raster data uses a grid of cells, while Vector data uses spatial coordinates.
The Raster and Vector data models represent different ways of capturing geographic information. The Raster model uses a grid of equally sized cells, or pixels, to represent data, making it ideal for continuous phenomena like elevation. In contrast, the Vector model uses spatial coordinates to define discrete features as points, lines, or polygons. This distinction is fundamental in GIS, as each model has unique strengths in data storage, processing speed, and accuracy for different types of spatial analysis.

78. (D) Geo-referencing/Geo-coding
The process of assigning precise geographic coordinates, such as latitude and longitude, to specific map features, addresses, or other data records is known as geo-referencing or geo-coding. This procedure is essential for integrating non-spatial data into a Geographic Information System (GIS). By giving data a spatial location, researchers can analyze its relationship with other geographic features, perform spatial analysis, and create maps that accurately reflect the real-world position of the information being studied.

79. (A) Converting paper maps or scanned images into digital vector data.
Digitization in GIS is the technical process of converting geographic information from analog formats, such as paper maps or scanned images, into a digital vector format. This typically involves tracing features with a mouse or digitizing tablet to create digital points, lines, and polygons. Once digitized, this data can be easily stored, manipulated, and analyzed within a GIS. This process is foundational for building modern geographic databases from historical records and traditional hardcopy maps.

80. (A) Both A and R are true and R is the correct explanation of A.
Vector data models are generally preferred for representing networks like roads and rivers because they use lines to precisely define these features. This point-line-polygon structure allows for the accurate representation of connectivity and flow, which is essential for network analysis. Furthermore, vector data supports high cartographic quality and clear shape definition. The reasoning correctly explains why the geometric properties of the vector model make it superior for representing and analyzing complex linear geographic systems.

81. (B) Plotting class frequencies against class midpoints and joining the points with straight lines.
A frequency polygon is a graphical tool used to represent the distribution of a continuous variable. It is constructed by plotting the frequency of each class at its midpoint and then connecting these points with straight lines. This chart provides a clear visual representation of the overall shape and trends within a frequency distribution. It is often preferred over histograms when comparing multiple distributions on the same set of axes, as the lines are less cluttered.

82. (A) Moran's I index
Moran's I is a fundamental measure of spatial auto-correlation used to determine the pattern of a variable across a geographic area. The index indicates whether the variable's values are clustered together, dispersed away from each other, or randomly distributed. A positive value suggests clustering of similar values, while a negative value indicates dispersion. This statistic is essential in spatial analysis for understanding geographic dependencies and identifying localized hotspots or significant spatial trends in the data.

83. (C) Estimate values at unsampled locations based on the values at known sampled locations.
Spatial interpolation is a technique in GIS used to estimate values for locations where no data has been collected, based on the known values from surrounding sampled locations. This process assumes that points close to each other are more similar than those further apart. It is commonly used to create continuous surfaces from discrete

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point data, such as generating a temperature map for an entire region using data from a limited number of weather stations.

84. (D) An advanced geostatistical interpolation method using spatial data correlation.
Kriging is an advanced geostatistical interpolation method that uses the spatial correlation between sampled points to predict values at unsampled locations. Unlike simpler deterministic methods, Kriging provides a statistically optimal estimate and a measure of the uncertainty or error associated with the prediction. This makes it a powerful tool in GIS and environmental science for creating highly accurate continuous surfaces, such as maps of mineral deposits, soil nutrients, or air pollution levels.

85. (A) I, II, and III only
Spatial analysis includes several key concepts. Spatial regression models are designed to account for dependencies between locations. A frequency curve serves as a smoothed representation of a frequency polygon, illustrating the overall distribution. Additionally, a Moran's I value close to +1 signifies strong spatial clustering. However, Kriging is a geostatistical method rather than deterministic, and bar diagrams are used for non-spatial data. Understanding these distinctions is vital for correctly applying statistical methods to geographic data.

86. (B) Framework for conducting research to answer a specific question.
The primary function of a research design is to provide a comprehensive framework or blueprint for conducting a study. It outlines the logical sequence of steps required to answer specific research questions or test hypotheses effectively. By detailing the methods for participant selection, data collection, and analysis, a research design ensures that the study is organized, systematic, and capable of producing valid and reliable results that address the core objectives of the investigation.

87. (D) Programme Evaluation Research
Programme evaluation research is a specialized type of applied research designed to assess the performance, effectiveness, and overall value of a specific programme, policy, or practice. It is essentially evaluative in nature, seeking to determine how well an intervention is working and whether it has achieved its intended outcomes. By providing evidence-based insights, this research helps stakeholders make informed decisions about programme improvement, resource allocation, and future sustainability, ensuring accountability and social impact.

88. (A) Both Statement I and Statement II are true.
Exploratory studies are ideally suited for investigating topics where there is little prior knowledge, helping to define problems and develop hypotheses for future research. In contrast, descriptive studies aim to provide a detailed and systematic account of the characteristics of a population or phenomenon. Both statements are true and represent the fundamental purposes of these two common research designs, which provide the essential groundwork for more complex analytical or experimental investigations in social science.

89. (C) Cross-sectional Study
A cross-sectional study is a research design that collects data from a sample of a population at a single, specific point in time. It provides a snapshot of the characteristics, attitudes, or prevalence of a condition within that group at that moment. Unlike longitudinal studies that track changes over time, cross-sectional designs are primarily used for descriptive purposes and for identifying associations between variables, offering a cost-effective and relatively quick method for gathering data.

90. (A) Reliability
Reliability in research refers to the consistency and stability of a measurement tool. A tool is considered highly reliable if it yields the same results when used repeatedly under the same conditions. This quality is essential for ensuring that any observed changes in data are due to actual differences in the subjects rather than flaws in the instrument itself. While reliability does not guarantee accuracy, it is a necessary prerequisite for the overall validity of the research findings.

91. (D) An in-depth interview with a key informant.
Qualitative research methods focus on exploring phenomena in-depth to understand meaning and context. An in-depth interview with a key informant is a classic example of this approach, as

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it allows for open-ended discussion and detailed personal insights that cannot be captured by structured surveys or numerical measurements. While quantitative methods emphasize scale and statistical representation, qualitative methods like interviews provide the rich, descriptive data necessary for understanding complex social behaviors and underlying motivations.

92. (B) P-4, Q-2, R-1, S-3
Research data can be categorized by its source and nature. Quantitative methods include large-scale surveys that produce numerical data, while qualitative methods like focus groups provide descriptive insights. Primary data is collected by the researcher specifically for the current study's purpose. Secondary data refers to existing information, such as census data, collected by others for different reasons. Understanding these distinctions is fundamental for selecting the most appropriate data collection strategy for any research project.

93. (C) The exposed group is 2.5 times more likely to get the disease than the unexposed group.
A Relative Risk of 2.5 indicates that individuals in the exposed group have a much higher likelihood of experiencing the outcome compared to those in the unexposed group. Specifically, they are 2.5 times more likely to get the disease. This measure quantifies the strength of the association between a risk factor and an outcome. An RR greater than 1.0 signifies increased risk, while an RR less than 1.0 would suggest that the exposure might be protective.

94. (D) Mutually exclusive
In probability theory, the addition law states that the probability of either event A or event B occurring is the sum of their individual probabilities. However, this simple relationship only holds true if the two events are mutually exclusive, meaning they cannot both happen at the same time. If there is any overlap between the events, the probability of both occurring must be subtracted from the sum to avoid double-counting, ensuring the final calculation remains accurate.

95. (A) The time between events in a Poisson process, such as the time between patient arrivals at a clinic.
In population and health data analysis, the Exponential distribution is commonly used to model the time intervals between successive events that occur randomly and independently at a constant average rate. This makes it ideal for representing the time between patient arrivals at a clinic or the lifespan of a medical device. As a continuous probability distribution, it is closely related to the Poisson distribution, which models the number of such events in a fixed time period.

96. (B) Type II error
A Type II error occurs in hypothesis testing when a researcher fails to reject a null hypothesis that is actually false. This means the study failed to detect a real effect or relationship that truly exists in the population. Often referred to as a "false negative," this error is frequently caused by a sample size that is too small to provide sufficient statistical power. Balancing the risks of Type I and Type II errors is critical in scientific research.

97. (B) A strong negative linear relationship.
A correlation coefficient of -0.85 signifies a strong negative linear relationship between two variables. This means that as the value of one variable increases, the value of the other variable tends to decrease consistently. The closer the coefficient is to -1 or +1, the stronger the relationship, while a value near zero indicates little to no linear association. A value of -0.85 shows a very high degree of predictability and a clear inverse trend between the variables.

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98. (A) I and IV only
Statistical concepts are interconnected. Regression analysis is used for modeling relationships and making predictions, and the p-value represents the probability of a Type I error. A 99% confidence interval is wider than a 95% one because it requires a larger range to be more certain of capturing the parameter. However, association and correlation are not interchangeable, as association is a broader term for any relationship, whereas correlation specifically refers to linear relationships between continuous variables.

113. (B) Outcome indicator
The "Percentage of households with access to safe drinking water" is an example of an outcome indicator. It measures the intermediate effect or benefit resulting from the programme's activities and outputs, such as building wells or installing pipes. Unlike outputs, which simply count the services provided, outcomes reflect a change in the status or behavior of the target population. This indicator shows the degree to which the programme has successfully improved the living conditions and health potential of the households.

114. (A) The ratio between the distance on a map and the corresponding distance on the ground.
The concept of scale in GIS and geography refers to the mathematical ratio between the distance on a map and the corresponding actual distance on the ground. For example, a scale of 1:10,000 means that one unit of measurement on the map represents 10,000 units in the real world. Scale is crucial for understanding the level of detail and the geographic extent shown on a map, and it is essential for making accurate measurements and spatial analyses.

115. (C) P-3, Q-4, R-2, S-1
GIS utilizes several fundamental data concepts. The Vector model represents discrete features using points, lines, and polygons, while the Raster model uses a grid of pixels. Geo-referencing is the process of aligning digital data to a known coordinate system to ensure spatial accuracy. Digitizing is the method of creating digital data from analog maps. Understanding these concepts is essential for building and managing geographic databases and for performing meaningful spatial analysis within a Geographic Information System.

116. (D) Locate points on a flat map using x, y coordinates.
A plane coordinate system, such as the Universal Transverse Mercator (UTM), is used to locate points on a flat map using a grid of x and y coordinates. This system projects the Earth's curved surface onto a flat plane, making it easier to perform precise measurements of distance and area. While spherical systems use latitude and longitude, plane systems are essential for engineering, surveying, and local-scale mapping where the Earth's curvature has a minimal impact on the accuracy of calculations.

117. (C) Raster data
The digital representation of continuous data, such as elevation, temperature, or rainfall, is most efficiently handled by the Raster data model in GIS. Because these phenomena vary continuously across space without clear boundaries, representing them as a grid of cells—where each cell has a specific value—is far more effective than using discrete vector shapes. The Raster model allows for complex spatial modeling and overlay analysis, which are necessary for understanding environmental patterns and predicting changes over large geographic areas.

118. (B) Mean center
In spatial analysis, a uni-variate statistic focuses on a single variable's spatial distribution. The mean center is a classic example, as it calculates the geographic average location for a set of points, representing the central point of their distribution. In contrast, spatial correlation and spatial regression are bivariate or multivariate techniques because they examine the relationship between two or more variables. The mean center provides a simple yet powerful way to identify the central tendency of geographic features in space.

119. (D) Explicitly account for spatial effects like spatial auto-correlation.
Spatial regression models are an improvement over traditional regression in geographical analysis because they explicitly account for spatial effects, such as spatial auto-correlation. Traditional regression assumes that observations are independent, but geographic data often exhibits patterns where nearby locations are more similar than distant ones. By incorporating spatial weights or error terms, spatial regression models provide more accurate parameter estimates and a better understanding of how relationships between variables vary across different geographic locations, ensuring more robust scientific conclusions.

120. (A) I, II, and III only
Scientific research is built on various frameworks. The conceptual framework serves as the initial idea exploration, while the empirical framework relies on direct observation. The analytical

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might have affected the results, such as small sample size, potential biases, or measurement constraints. Being transparent about these limitations is a crucial part of scientific integrity, as it helps readers correctly interpret the findings and provides guidance for future research to address these specific weaknesses.

107. (D) Maintaining transparency about the research methodology and delivering the agreed-upon research product.
The ethical code related to the client or funding agency primarily focuses on maintaining professional transparency and integrity throughout the research project. This includes providing an honest assessment of the feasibility of the study, using funds appropriately, and delivering a research product that meets the agreed-upon methodological standards. Researchers must also ensure that they do not compromise their objectivity or alter results to suit the client's interests, thereby upholding the overall credibility and social responsibility of their work.

108. (B) Taking corrective actions during the implementation of the programme.
Monitoring is a vital management tool that helps in taking corrective actions during the actual implementation of a programme. By continuously tracking progress against planned activities and outputs, managers can identify delays, resource gaps, or implementation bottlenecks as they arise. This real-time feedback allows for immediate adjustments to keep the programme on schedule and within budget. Unlike evaluation, which assesses overall success at the end, monitoring focuses on ensuring that the day-to-day operations are functioning as intended.

109. (C) Process indicator
An indicator such as the "Number of ante-natal care (ANC) sessions conducted per month" is classified as a process indicator. It measures the activities and tasks being performed to deliver the programme's services. Unlike input indicators which focus on resources or output indicators which count final results, process indicators track the implementation phase itself. They are essential for monitoring whether the programme's planned activities are occurring at the intended frequency and according to established quality standards.

110. (B) II, I, III, IV
Evaluation types follow a logical chronological order throughout a programme's lifecycle. It begins with ex-ante evaluation, conducted before implementation to assess feasibility. Next is mid-term evaluation, performed during the programme to track progress. Terminal evaluation takes place at the end of the programme to assess overall achievements. Finally, ex-post evaluation is conducted sometime after the programme has concluded to measure its long-term, sustained impact. This sequence provides a comprehensive assessment from the planning stage through to final results.

111. (A) Whether the physical presence of the service (e.g., health facility, staff) exists for the population to use.
Evaluating the availability of a health service focuses on whether the physical presence of the service exists and is ready for use by the target population. This includes assessing the existence of health facilities, the presence of trained medical staff, and the availability of essential equipment and medicines. While accessibility and quality are also important, availability is the most basic requirement, ensuring that the necessary infrastructure and resources are actually in place to provide care when needed by the community.

112. (B) Concurrent evaluation is a type of summative evaluation.
The statement that concurrent evaluation is a type of summative evaluation is incorrect. Concurrent evaluation is actually conducted during the implementation of a programme to provide immediate feedback for improvement, which aligns more with formative purposes. Summative evaluation, on the other hand, is specifically performed at the end of a programme or at major milestones to judge its overall effectiveness and worth. A robust evaluation framework typically integrates formative, concurrent, and summative assessments to provide a complete picture of programme performance.

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description of every aspect of the research process, including the theoretical framework, a thorough literature review, intricate details of the methodology, and a full presentation and discussion of all findings. This level of detail is necessary for allowing other professionals to critically evaluate the study's rigor, replicate the research if needed, and fully understand the implications of the results.

158. (D) Anonymity means the researcher cannot link responses to individuals.
The fundamental difference between anonymity and confidentiality lies in whether the researcher can link a respondent's identity to their data. Anonymity means that no identifying information is ever collected, so even the researcher cannot know who provided which responses. Confidentiality, however, means the researcher knows the participant's identity but promises to keep it secret and not disclose it to others. Anonymity provides the highest level of protection for research participants by completely unlinking their identity from the data.

159. (A) Output indicator
In the context of a family planning programme, Couple Years of Protection (CYP) is used as an output indicator. It provides a standardized measure of the estimated protection provided by family planning services during a one-year period, based on the volume of different contraceptive methods distributed or provided to clients. As an output measure, CYP helps managers track the immediate reach and service delivery volume of the programme, serving as a key performance indicator for family planning interventions.

160. (B) I, II, and III only
Monitoring, evaluation, and research each serve distinct and critical roles in programme management. Monitoring is a continuous tracking process, while evaluation is a periodic assessment of overall worth. Action research is a practical, cyclical method used to solve immediate problems within a specific context. However, the Health Management Information System (HMIS) is primarily used for routine monitoring and formative purposes, not for terminal summative evaluation. These three accurate statements highlight the diverse tools available for effective evidence-based programme oversight.

161. (B) larger
A map with a scale of 1:25,000 is considered a larger scale map than one with a scale of 1:1,000,000. In cartography, a larger scale refers to a smaller ratio where the denominator is smaller. This means that a 1:25,000 map shows a smaller area of the Earth's surface but provides much greater detail. In contrast, a 1:1,000,000 scale map shows a much larger area, such as a whole country, but with significantly less detail.

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162. (A) Both Statement I and Statement II are true.
Geo-coding and geo-referencing are both essential GIS processes but serve different purposes. Statement I is true; geo-coding involves converting descriptive locations, like street addresses, into geographic coordinates. Statement II is also true; geo-referencing is the process of taking an analog image or map and aligning it to a known coordinate system to give it a spatial location. Both processes are fundamental for integrating diverse data sources into a Geographic Information System for accurate spatial mapping and analysis.

163. (C) Manipulating spatial relationship matrices.
Matrix Algebra is frequently used in spatial analysis for manipulating and solving complex spatial relationship matrices. These matrices are essential for representing the connectivity, proximity, and weights between different geographic features in a network or across a landscape. Techniques like spatial auto-correlation and spatial regression rely heavily on matrix operations to calculate indices and estimate model parameters. This mathematical approach allows for the rigorous analysis of spatial dependencies and interactions within a Geographic Information System.

164. (D) It cannot establish causal relationships between variables.
The most significant limitation of a descriptive research design is its inability to establish causal relationships between variables. While these studies are excellent for providing a detailed snapshot of "what is" and identifying patterns or associations, they do not involve the manipulation of variables or the experimental controls necessary to prove that one factor causes another to change. To determine cause-and-effect, researchers must move beyond description and use more rigorous

framework is used for decision-making and interpreting data. However, research does not always result in a new theory; it may also test existing theories, describe phenomena, or solve practical problems. Therefore, only the first three statements accurately describe the foundational frameworks used to guide the research process and ensure systematic inquiry and logical conclusions.

121. (C) Operations research
Operations research is a specialized field that uses advanced mathematical and statistical modeling to improve decision-making and organizational efficiency. It is often applied to complex systems to optimize performance, resource allocation, and logistics. By using quantitative techniques to analyze various scenarios, operations research helps managers identify the most effective strategies for achieving organizational goals. This approach is highly practical, focusing on solving real-world operational problems through a systematic and data-driven scientific methodology.

122. (D) Statement I is false, but Statement II is true.
In experimental research, the design determines the level of control over variables. In a true experiment, the control group specifically does not receive the experimental treatment to provide a baseline for comparison, making Statement I false. However, Statement II is true, as the defining characteristic of a quasi-experiment is the lack of random assignment to groups. Understanding these distinctions is crucial for evaluating the internal validity and causal claims made by different types of experimental and quasi-experimental research studies.

123. (D) The consistency and stability of the measurement.
The issue of reliability in research design is concerned with the consistency and stability of a measurement over time and across different observers. A reliable instrument should yield the same results if the same phenomenon is measured repeatedly under identical conditions. While validity ensures the tool measures the correct concept, reliability ensures the measurements are dependable. This is a fundamental quality control requirement for any scientific study, as unstable or inconsistent data would lead to untrustworthy and unscientific conclusions.

124. (B) 1
When the odds of an outcome occurring are exactly the same for two different groups, the Odds Ratio (OR) will be 1.0. This value indicates that there is no association between the exposure or group membership and the outcome being studied. An OR of 1.0 serves as a critical baseline in statistical analysis; values greater than 1.0 suggest an increased likelihood in one group, while values less than 1.0 suggest a decreased likelihood, or a protective effect.

125. (A) Both A and R are true and R is the correct explanation of A.
The Normal distribution is fundamental to statistical inference because of the Central Limit Theorem. This theorem states that for a sufficiently large sample size, the sampling distribution of the sample mean will follow a normal distribution, even if the underlying population is not normally distributed. This allows researchers to use normal-based statistical tests and confidence intervals for making accurate inferences about population parameters. The reasoning correctly explains why the Normal distribution is so pervasive and essential in scientific data analysis.

126. (D) There is no difference between the means of group 1 and group 2.
A null hypothesis (H0) in statistics typically represents a statement of 'no difference' or 'no effect.' When testing for the difference between two group means, the null hypothesis is traditionally stated as there being no difference between them. This serves as the baseline assumption that the researcher attempts to disprove through statistical testing. If the evidence from the sample is strong enough to reject the null hypothesis, the researcher concludes that a significant difference likely exists in the population.

127. (A) Fail to reject the null hypothesis.
In hypothesis testing, if the calculated p-value is greater than the chosen level of significance (e.g., 0.05), the researcher fails to reject the null hypothesis. A p-value of 0.25 indicates that the observed data is quite likely to occur by chance under the null hypothesis. Therefore,

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there is not enough evidence to conclude that a significant effect or relationship exists. In this case, the researcher must stick with the baseline assumption that no difference was found between the groups.

128. (B) Population
The concept of a population in research refers to the entire group of individuals, items, or events that the researcher is interested in studying and making generalizations about. It defines the universal set from which a sample is drawn. Depending on the research question, a population can be very large, such as all citizens of a country, or more specific, such as all teachers in a single city. Clearly defining the population is essential for ensuring study relevance.

129. (B) The sampling distribution variability is high, meaning estimates may differ from the parameter.
A large standard error indicates that the sample estimates are likely to vary significantly from one sample to another, suggesting high variability in the sampling distribution. This means that any single sample statistic might not be a very precise estimate of the true population parameter. In contrast, a small standard error signifies that the sample estimates are consistently close to the parameter, providing more confidence in the precision and reliability of the research findings derived from the sample data.

130. (B) II, III, and IV only
Effective research involves precise formulation and rigorous sampling. A falsifiable hypothesis is essential for scientific testing, while multi-stage sampling provides a practical approach for large-scale studies. A design effect of 2.0 indicates that a complex sample requires twice the size of a simple random sample for equivalent precision. However, problem definition is the first step, not the final one, and purposive sampling is a non-probability technique generally not used for making formal population-level statistical inferences.

131. (C) Purposive sampling
For a study exploring the complex, lived experiences of a specific and relatively hard-to-reach group like teenage mothers, purposive sampling is the most appropriate method. This approach allows the researcher to deliberately select participants who have first-hand experience and can provide rich, in-depth information. Unlike random sampling, which aims for statistical representativeness across a broad population, purposive sampling focuses on capturing the depth and diversity of perspectives within the specific group being studied, ensuring high-quality qualitative data.

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132. (D) To propose actionable steps based on interpretation of results.
The main purpose of the recommendations section in a research report is to propose specific, actionable steps based on the interpretation of the study's results. This section translates the scientific findings into practical advice for policymakers, practitioners, or other stakeholders. While the conclusion summarizes the study, the recommendations focus on future actions and improvements. This ensures that the research has real-world utility and provides a clear path forward for addressing the problems or opportunities identified during the investigation.

133. (C) Anonymity
Anonymity is a fundamental ethical principle ensuring that a respondent's identity is never linked to their responses, even by the researcher. This means that no identifying information, such as names or addresses, is collected or stored with the data. Anonymity is a stronger protection than confidentiality, where the identity is known but kept secret. By guaranteeing anonymity, researchers encourage honest participation and protect individuals from potential social, legal, or professional repercussions that might arise from their shared information.

134. (B) Are the health clinics stocked with the necessary medicines as planned?
A characteristic monitoring activity involves the regular tracking of inputs and outputs to ensure a programme is being implemented as planned. Checking whether health clinics are stocked with necessary medicines is a perfect example, as it focuses on routine service delivery and resource availability. Unlike evaluation, which might look at long-term impacts or cost-effectiveness relative to control groups, monitoring provides the immediate, operational data needed for day-to-day management and ensuring that the basic requirements for service provision are being met.

135. (D) How gender norms affect access to and control over healthcare.
Evaluating gender perspectives in RMNCH+A services involves examining how deeply ingrained gender norms, roles, and power dynamics affect the ability of different genders to access and control healthcare services. This goes beyond just counting male and female participants; it looks at barriers such as decision-making power within households and gender-specific health needs. This analysis is crucial for ensuring that health programmes are sensitive to gender differences and work toward achieving more equitable health outcomes for everyone in the community.

136. (A) Outcome
In programme evaluation, an outcome represents an intermediate change in the target population resulting from the programme's outputs. If a new teaching method (the output) leads to higher test scores among students, those improved scores are a clear example of an outcome. They reflect a successful change in knowledge or skills. Outcomes are the bridge between the immediate products of a programme and its ultimate, long-term impact on the broader community or social conditions.

137. (C) The name of the doctor in charge of the hospital.
Non-spatial data, often called attribute data, describes characteristics or information about a geographic feature rather than its physical location or shape. In a GIS, the name of a school's principal is a perfect example of non-spatial data that can be linked to the school's spatial location. While latitude, polygons, and road lines define where and what the feature is in space, attribute data like the principal's name provides additional, essential context about that specific geographic feature.

138. (A) Layout preparation
Layout preparation is the final stage in the cartographic process where a researcher creates a finished map for presentation or publication. This involves organizing the map elements, such as the main map frame, a clear title, a legend, a scale bar, and a north arrow, on a single page. A well-designed layout ensures that the spatial information is communicated effectively and that all the necessary tools are provided for the reader to interpret the map accurately and professionally.

139. (D) A clustered spatial pattern (similar values are close together).
A positive value of the Moran's I index suggests a clustered spatial pattern, where similar values are located near each other across a geographic area. This indicates positive spatial auto-correlation, meaning that if a location has a high value for a variable, its neighbors are also likely to have high values. Identifying such clusters is critical in fields like public health and urban planning for detecting hotspots of disease, poverty, or other socio-economic phenomena that require targeted interventions.

140. (A) P-4, Q-3, R-2, S-1
Spatial analysis uses specialized techniques to understand geographic data. Spatial interpolation is used for value estimation at unsampled locations. Moran's I measures spatial auto-correlation to identify patterns. Spatial regression is a tool for modeling spatial dependencies between variables. Geocoding is the process of assigning geographic coordinates to addresses or names. Mapping these techniques to their specific purposes is fundamental for any researcher using Geographic Information Systems to conduct rigorous and accurate spatial research and data interpretation.

141. (C) The structure and logic used to interpret data and draw conclusions.
The analytical framework of a research project represents the logical structure and set of rules used to interpret data and draw meaningful conclusions. It outlines how the researcher will process information and connect findings to the original study questions or hypotheses. By providing a clear roadmap for analysis, this framework ensures that the results are interpreted systematically and objectively, bridging the gap between raw data collection and the final reporting of scientifically sound and coherent insights.

142. (D) Pre-experimental design
A pre-experimental design is characterized by the manipulation of an independent variable but lacks the rigorous controls found in true experiments. Specifically, it often involves

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a single group that receives the treatment without a pre-test or a separate control group for comparison. Because these designs do not account for other factors that might influence the results, they are considered weak for establishing causal relationships but can be useful for initial exploration or for pilot testing new interventions.

143. (B) Both Statement I and Statement II are false.
Research methodology involves several common misconceptions. In reality, panel studies are highly susceptible to participant attrition because they track the same individuals over multiple time points, making Statement I false. Additionally, issues of reliability and validity are critical concerns for both quantitative and qualitative research, although they are assessed differently in each, making Statement II also false. Both statements demonstrate a misunderstanding of fundamental research design principles and the universal importance of ensuring data quality and study integrity.

144. (B) 0.5
Relative Risk is calculated as the ratio of the risk in the treated group to the risk in the control group. If the risk of an adverse event is 5% in the treatment group and 10% in the placebo group, the Relative Risk is 0.05 divided by 0.10, which equals 0.5. This value indicates that the treatment group has half the risk of the adverse event compared to the placebo group, suggesting a significant protective effect from the treatment.

145. (B) To predict a categorical dependent variable.
The primary purpose of using logistic regression is to predict a categorical dependent variable, most commonly one that is binary, meaning it has only two possible outcomes like "yes/no" or "pass/fail." Unlike linear regression, which predicts a continuous value, logistic regression models the probability of a specific outcome occurring based on one or more independent variables. This makes it an essential tool in medical, social, and marketing research for classification and understanding risk factors.

146. (A) Cluster sampling
Cluster sampling is demonstrated when a researcher divides a city into existing groups, like census tracts, and then randomly selects a subset of those groups to study. In this example, by selecting 10 tracts and surveying everyone within them, the researcher uses the tracts as clusters. This method is often more practical and cost-effective than simple random sampling when the population is large and geographically dispersed, as it concentrates data collection efforts within specific, manageable locations.

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147. (C) Provides a tentative explanation and guides the direction of the study.
Formulating a research hypothesis is a critical step because it provides a tentative explanation for the research problem and directly guides the direction of the study. It narrows the focus of the investigation, helping the researcher determine exactly what data needs to be collected and which statistical methods are appropriate for testing. By providing a clear, testable proposition, a hypothesis ensures that the research process remains systematic, efficient, and oriented toward producing a specific, scientifically grounded answer.

148. (D) Abstract
The abstract is a vital section of a research report that provides a concise and comprehensive summary of the entire study. It typically includes the research problem, methodology, key findings, and main conclusions. Because it is usually the first part of the report that anyone reads, a well-written abstract allows other researchers and practitioners to quickly determine the relevance and importance of the study without having to read the full document, facilitating efficient information sharing and literature reviews.

149. (C) Concurrently with programme implementation.
"Concurrent evaluation" is specifically named because it occurs concurrently, or simultaneously, with the implementation of a programme. This type of evaluation is designed to provide real-time feedback and insights to managers and stakeholders while activities are still underway. By identifying successes and challenges during the implementation process, concurrent evaluation allows for timely adjustments and improvements, ensuring that the programme remains on track to achieve its intended outcomes and that resources are being used effectively.

150. (A) Both A and R are true and R is the correct explanation of A.
In programme evaluation, combining routine service statistics with special surveys is essential for a comprehensive assessment. Service statistics, like those from HMIS, are ideal for continuously monitoring programme outputs and service delivery at health facilities. However, surveys are often necessary to measure population-level outcomes and impacts, such as changes in health status or behaviors, which are not captured by routine systems. This dual approach provides a complete picture of both what the programme provided and the resulting change in the community.

151. (D) Assessing whether provided services meet professional health standards.
Evaluating the quality of RMNCH+A services involves assessing whether the provided healthcare meets established professional and clinical standards. This includes examining the competence of health workers, the appropriateness of treatments, and the safety and effectiveness of the care delivered. While availability and equity are important dimensions of service delivery, quality focuses on the actual standard of care received by the patient, ensuring that the services provided are likely to result in positive health outcomes for the community.

152. (A) Continuous data
Elevation data, which represents altitude above sea level, is a classic example of continuous data in a Geographic Information System. Continuous data exists over a surface without clear, distinct boundaries, meaning that values can be found at any point across the landscape. In contrast to discrete data like roads or buildings, continuous variables such as elevation, temperature, or rainfall are most accurately represented using the Raster data model, where each cell in a grid stores a specific value.

153. (C) A trend over a period of time.
A line diagram is an ideal graphical method for representing a trend or change in a variable over a period of time. By connecting individual data points with lines, it clearly illustrates whether a phenomenon is increasing, decreasing, or remaining stable. This type of chart is commonly used in research to show temporal patterns, such as fluctuations in population growth, economic indicators, or health outcomes across several years, providing a clear and intuitive visual narrative of time-series data.

154. (A) Experimental
If a study is specifically designed to determine a cause-and-effect relationship between two variables, the most appropriate research design is an experimental one. This design involves the deliberate manipulation of an independent variable and the use of controls, such as random assignment and a control group, to ensure that any observed changes in the dependent variable are truly caused by the intervention. Experimental research is the most rigorous method for establishing causality and testing the impact of specific factors.

155. (D) Conditional Probability
Bayes' Theorem relies on the law of conditional probability to update the likelihood of a hypothesis based on new information. It provides a mathematical framework for calculating the probability of an event given that another event has occurred. By combining prior beliefs with the probability of the new data, Bayes' Theorem allows researchers to systematically refine their knowledge. This approach is fundamental in statistics for making more accurate predictions and diagnoses as emerging evidence becomes available for analysis.

156. (B) Ensures representation of all identified subgroups and precision.
The primary advantage of stratified random sampling over simple random sampling is that it ensures all identified subgroups, or strata, are adequately represented in the final sample. By dividing the population into homogeneous groups and sampling from each, this method reduces sampling error and increases the overall precision of the study's estimates. This is particularly valuable when certain subgroups are small or when the researcher expects significant differences between the groups being studied, leading to more robust findings.

157. (C) Detailed report
A detailed research report is specifically intended for a professional and academic audience. It provides an exhaustive and comprehensive

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99. (C) To outline the procedure for selecting the sample from the population.
The primary purpose of a sampling design is to provide a detailed, systematic plan for selecting a sample from a larger population. It outlines the specific procedure and rules the researcher will follow to ensure that the chosen group is representative of the whole. A well-constructed sampling design is essential for minimizing bias and allowing for the generalization of research findings from the sample back to the population with a known level of confidence and precision.

100. (D) Simple random sampling
Simple random sampling is the most appropriate technique when the population is relatively homogeneous and a complete list of every individual—the sampling frame—is available. In this method, every member of the population has an equal and independent chance of being selected. It is the purest form of probability sampling and serves as the baseline for many statistical procedures, ensuring that the resulting sample is unbiased and that the results can be generalized to the entire population.

101. (A) Both A and R are true and R is the correct explanation of A.
Non-sampling errors are often more challenging to control and quantify because they stem from a diverse range of human and administrative factors. These include respondent bias, poorly worded questions, and data entry mistakes, which do not follow predictable mathematical patterns like sampling error does. Because they cannot be easily modeled, these errors can introduce significant, invisible bias into research results. The reasoning correctly identifies why these errors are particularly problematic for maintaining the overall integrity and accuracy of a study.

102. (B) A non-probability technique where participants are selected based on research goals.
Purposive sampling is a non-probability sampling technique where participants are selected based on the specific characteristics or experiences they possess that are relevant to the research goals. Instead of random selection, the researcher uses their judgment to choose individuals who can provide the most detailed and pertinent information for the study. This method is commonly used in qualitative research where the focus is on depth and insight rather than broad statistical representativeness or population-level generalizations.

103. (D) Cluster sampling
The design effect is expected to be greater than 1 in cluster sampling designs. This happens because individuals within the same cluster, such as a village or school, tend to be more similar to each other than to individuals in other clusters. This internal homogeneity reduces the amount of unique information provided by each participant compared to a simple random sample. Consequently, cluster sampling is less precise for a given sample size, necessitating a larger sample to achieve the same power.

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104. (A) Translating a research problem into a clear, testable proposition.
The process of formulating a research hypothesis involves translating a broad research problem into a clear, concise, and testable proposition. A hypothesis specifies the expected relationship between variables in a way that can be supported or refuted by empirical data. It acts as a bridge between abstract theory and concrete data collection, guiding the researcher on what information to gather and which statistical tests to use, ultimately focusing the study on finding a specific, measurable answer.

105. (D) All I, II, III, IV, and V
Research ethics comprise several fundamental principles designed to protect participants and ensure scientific integrity. These include obtaining informed consent, guaranteeing anonymity and confidentiality, and ensuring that the benefits of the study outweigh any potential risks. Additionally, researchers must avoid plagiarism and disclose any potential conflicts of interest. All these components are essential for conducting responsible research that respects human dignity and maintains the trust of the scientific community and the public, forming the basis of ethical research practice.

106. (A) In the discussion or conclusion section.
In a research report, the detailed description of the study's limitations is typically found in the discussion or conclusion section. This is where the researcher acknowledges any factors that

experimental or quasi-experimental designs that control for confounding factors.

165. (B) I, II, and III only
Scientific research is built on foundational principles of testing and precision. A hypothesis must be empirically testable, and reliability is a necessary prerequisite for validity. Operations research is a specialized tool used specifically to enhance decision-making and efficiency. However, formative evaluation is conducted for programme improvement, not for long-term impact, and the problem components guide the study rather than solely determining results. Understanding these first three core concepts is essential for designing and executing scientifically sound and practically useful research.

166. (B) Repeated cross-sectional study
A researcher who surveys a new sample of first-year students each year is conducting a repeated cross-sectional study. Unlike a panel study, which tracks the exact same individuals over time, this design draws fresh samples from the same population at multiple time points. This approach is effective for identifying population-level trends and changes in attitudes or behaviors across different cohorts, providing valuable insights into how a specific group, like college students, evolves over time without the challenges of participant attrition.

167. (D) The exposure is a protective factor against the outcome.
An Odds Ratio of less than 1.0 indicates that the odds of the outcome occurring are lower in the exposed group than in the unexposed group. This suggests that the exposure factor may be protective against the outcome being studied. For example, if a certain diet results in an OR of 0.6 for a disease, it means individuals following that diet have 40% lower odds of developing the disease. This is a critical finding for identifying beneficial behaviors and interventions.

168. (A) The product of their individual probabilities.
In probability theory, if two events are independent, it means that the occurrence of one event has no influence on the probability of the other occurring. To find the probability that both independent events happen at the same time, the multiplication rule is used, where the probability is the product of their individual probabilities. This fundamental principle is essential for calculating the likelihood of complex, multi-stage outcomes in both theoretical statistics and real-world data analysis across various scientific disciplines.

169. (C) Selection based on specific criteria.
The defining characteristic of purposive sampling is that participants are selected based on specific, pre-defined criteria that are relevant to the research goals. Instead of relying on random chance, the researcher uses their expert judgment to identify and include individuals who can provide the most pertinent and detailed information. This non-probability method is particularly useful in qualitative research when the objective is to understand specific experiences or perspectives rather than to achieve broad, statistical population-wide representativeness.

170. (A) Providing a detailed copy of the final data set to the respondent.
While researchers have many ethical responsibilities toward respondents, providing a detailed copy of the full raw data set to each individual participant is not one of them. In fact, doing so could potentially violate the privacy and confidentiality of other participants if the data is not properly anonymized. The core ethical duties include ensuring voluntary participation through informed consent, protecting the confidentiality and anonymity of the respondents, and taking all necessary steps to minimize any potential risk or harm.

171. (D) Impact
In programme evaluation, the impact level is the most difficult to measure and attribute to a specific intervention. Impact indicators reflect long-term, broad changes in a population's status, such as mortality rates or economic well-being. These changes are influenced by many complex factors outside of the programme's control, making it challenging to prove a direct causal link. Consequently, measuring impact requires sophisticated research designs and long-term data collection, unlike more immediate and direct output or outcome measures.

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172. (B) Latitude and longitude to define locations on the Earth's surface.
A spherical coordinate system in geography is used to define precise locations on the three-dimensional, curved surface of the Earth. It uses two angular measurements: latitude, which measures distance north or south of the equator, and longitude, which measures distance east or west of the prime meridian. This system is essential for global mapping and navigation, providing a universal way to identify any point on the planet's surface with high accuracy, regardless of the distortions inherent in flat map projections.

173. (C) It simplifies many spatial analysis operations, particularly for continuous data.
A major advantage of using the Raster data model in GIS is its ability to simplify many complex spatial analysis operations, especially when dealing with continuous data like elevation or temperature. Because the data is stored in a uniform grid of cells, performing mathematical overlays, proximity analysis, and environmental modeling becomes much more computationally efficient. This makes the Raster model ideal for scientific research that involves analyzing patterns and relationships across continuous geographic surfaces rather than discrete objects.

174. (D) Vector Projection
In cartography, map projections are mathematical methods like the Mercator, Conic, and Azimuthal projections used to transform the Earth's curved surface onto a flat map. Each has different properties for preserving area, shape, or direction. However, "Vector" is not a type of map projection; rather, it is a data model used in GIS to represent geographic features as points, lines, and polygons. While projections deal with geometric transformation, data models like vector and raster deal with information representation.

175. (A) P-3, Q-1, R-4, S-2
Different sampling methods use specific procedures to select participants. Simple random sampling gives every unit an equal and independent chance. Systematic sampling involves choosing every k-th unit from a list. Stratified sampling divides the population into homogeneous subgroups before sampling from each. Cluster sampling involves the inclusion of entire groups, or clusters, in the study. Understanding these procedural differences is essential for choosing the right design to ensure a representative sample and minimize potential bias and sampling error.

176. (B) External validity
External validity refers to the extent to which the results of a research study can be generalized beyond the specific sample and setting of the study to other populations, locations, and time periods. It assesses the real-world applicability of the findings. While internal validity focuses on whether the study's conclusions are correct for its own subjects, external validity ensures that the knowledge gained has broader relevance and can be used to inform wider policy and practice.

177. (D) Statement I is false, but Statement II is true.
Statistical significance and effect size provide different types of information. Statement I is false because the p-value only indicates whether an effect is likely due to chance, not how large or important the effect actually is. However, Statement II is true, as a confidence interval provides a range of plausible values for the effect size, giving researchers a much better understanding of the magnitude and precision of their findings than a p-value alone. Both are essential for interpretation.

178. (A) A decrease in the standard error.
Increasing the sample size in a study generally leads to a decrease in the standard error of the estimate. A larger sample provides more information and reduces the impact of random chance, making the sample statistic a more precise and reliable estimate of the true population parameter. This increase in precision results in narrower confidence intervals and greater statistical power, allowing researchers to detect smaller effects with more confidence and providing a more accurate picture of the population.

179. (C) Ensure the problem is specific, clear, and manageable for study.
The primary goal of defining the various components of a research problem is to ensure that the study is specific, clear, and manageable. By breaking down a broad issue into concrete variables, specific populations, and defined

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boundaries, the researcher creates a focused roadmap for the entire investigation. This clarity is essential for designing appropriate methods, selecting the right data collection tools, and ensuring that the final research produces meaningful and actionable results that directly address the core problem.

180. (A) II, IV, I, III, V
A detailed research report follows a logical order to communicate the study's narrative effectively. It begins with the introduction to present the problem, followed by the literature review to provide context. The methodology section then explains how the research was conducted. After the findings are presented in the results section, the discussion interprets these results in relation to theory and practice. This standardized structure ensures that the research is presented transparently and can be easily evaluated by other professionals.

181. (C) Timeliness and regularity for monitoring service delivery.
A key strength of HMIS data is its timeliness and regularity, making it an ideal tool for monitoring health service delivery. Because it provides continuous data from health facilities, it allows managers to track performance trends and identify implementation issues as they occur. Unlike periodic surveys, which offer snapshots at wide intervals, the routine nature of HMIS provides the steady stream of information needed for effective day-to-day management and ensuring that health programmes are meeting their operational targets.

182. (B) A random spatial pattern
A Moran's I value of approximately zero indicates that there is no spatial auto-correlation in the data, meaning that the variable's values are distributed in a random spatial pattern. In this scenario, the location of a specific value provides no information about the values of its neighbors. Nearby points are no more similar or dissimilar than distant points. This finding suggests that the phenomenon being studied does not exhibit any geographic clustering or dispersion across the area of interest.

183. (D) Observed effects result from the independent variable.
Internal validity in research design refers to the degree to which a study can accurately establish a causal relationship between the independent and dependent variables. It specifically measures the extent to which the observed effects in the study are the direct result of the intervention rather than being caused by other confounding factors. High internal validity is essential for making confident claims that one factor truly caused a change in another within the specific context of the research project.

184. (A) For modeling the number of "successes" in a fixed number of independent Bernoulli trials.
The Binomial distribution is an appropriate mathematical model for analyzing the number of successes in a fixed number of independent trials, where each trial has only two possible outcomes, such as success or failure. This discrete probability distribution is widely used in various fields for modeling binary events, like the number of patients responding to a treatment or the number of defective items in a batch. It provides a statistical foundation for calculating the likelihood of different outcomes across multiple trials.

185. (C) Incomplete, containing duplications, or outdated.
A sampling frame is considered inadequate if it is incomplete, contains duplications, or is outdated. An effective frame must accurately list every individual or unit in the target population to ensure that every member has a chance of being selected. If the frame is flawed, the resulting sample may be biased and not truly representative of the population, leading to incorrect conclusions. Maintaining an up-to-date and accurate sampling frame is therefore critical for the scientific validity of any research.

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186. (A) Identifying variables from the research problem.
The first step in formulating a research hypothesis is usually identifying the key variables from the research problem. Once the problem is clearly defined, the researcher must pinpoint the factors that are expected to interact or show a relationship. By isolating these variables, the researcher can then propose a specific, testable

statement about how they are related. this process transforms a broad question into a concrete proposition that can be investigated through empirical data collection and statistical analysis.

187. (D) Presenting someone else's work or ideas as one's own without proper acknowledgement.
Plagiarism is a serious ethical violation in research that involves presenting someone else's work, ideas, data, or words as one's own without providing proper credit or acknowledgement. This includes failing to cite sources correctly or copying text directly without using quotation marks. Plagiarism undermines the integrity of scientific communication and violates the trust between researchers. Upholding high ethical standards requires that all intellectual contributions from others are clearly and accurately recognized through appropriate citations and references.

188. (B) Improvement in students' literacy rates.
In an education programme, an improvement in students' literacy rates is an example of an outcome indicator. It measures the intermediate change in knowledge and skills resulting from the programme's activities, such as teacher training or new textbooks. Unlike output indicators that simply count services provided, outcomes reflect the actual benefit or impact on the target population. This indicator shows whether the programme has successfully achieved its goal of enhancing the educational status of the students in the community.

189. (C) vector; raster
In GIS, discrete data and continuous data are best represented by different models. Discrete data, which has clear and distinct boundaries like buildings, roads, or political borders, is most accurately captured using the vector data model with its points, lines, and polygons. Continuous data, which varies across a surface without sharp edges, such as temperature, elevation, or rainfall, is most effectively represented by the raster data model, where a grid of cells captures the varying values across space.

190. (A) I, II, and III only
Research methodology is defined by specific design properties. Longitudinal studies are a type of observational design that tracks changes over time, while true experiments are characterized by manipulation and random assignment. Additionally, reliability is a necessary prerequisite for validity. However, exploratory research is used to investigate poorly understood problems rather than testing specific, pre-defined hypotheses. These first three statements correctly describe the fundamental characteristics and quality requirements of different research approaches, ensuring that studies are appropriately designed to meet their objectives.

191. (A) Can be used to predict the value of one variable based on another.
A key difference between correlation and regression is that regression can be used to predict the value of a dependent variable based on the value of one or more independent variables. While correlation only measures the strength and direction of a linear relationship between two variables, regression provides a mathematical model of that relationship. This predictive capability makes regression a more powerful tool for analysis, allowing researchers to estimate how changes in one factor will influence another in future scenarios.

192. (B) Convenience sampling
Convenience sampling is a non-probability technique where the researcher selects participants who are most easily accessible and readily available. This might involve surveying people in a public place or using students in a classroom. While this method is quick and inexpensive, it is highly susceptible to bias and the results are generally not representative of the broader population. It is often used for pilot studies or initial exploratory research where statistical generalization is not the primary objective of the study.

193. (B) Policy-makers and managers who need quick, actionable insights.
The primary audience for a brief, summary research report is often policy-makers, managers, and practitioners who need quick, actionable insights. These readers typically do not have the time to go through a full detailed report but need the key findings and recommendations to inform their decision-making. A brief report focuses on communicating the most relevant information in a concise and clear manner, ensuring that the

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research has a practical impact on programme management and policy development within the organization.

194. (A) Assessing the overall effectiveness and impact after the programme has been running for a significant period.
A summative evaluation of a health programme focuses on assessing the overall effectiveness, worth, and impact of the intervention after it has been running for a significant period. Its primary goal is to determine whether the programme has achieved its long-term objectives and provided a good return on investment. This type of evaluation is often used for accountability and for making major decisions about the future of the programme, such as whether it should be continued, expanded, or discontinued.

195. (C) Adolescents
In the context of India's health programme, the "A" in RMNCH+A stands for Adolescents. The acronym stands for Reproductive, Maternal, Newborn, Child, and Adolescent Health. The addition of the adolescent component reflects a comprehensive approach to health that recognizes the specific needs and vulnerabilities of young people. By targeting this age group, the programme aims to improve long-term health outcomes and break the intergenerational cycle of poor health, ensuring that health services address the entire lifecycle of the population.

196. (D) A smooth, freehand curve drawn through the points of a frequency polygon.
A frequency curve is a graphical representation of a frequency distribution that is created by drawing a smooth, freehand curve through the points of a frequency polygon. It is used to illustrate the general shape and trend of the distribution without the sharp angles of the polygon. This smoothing process helps to visualize the underlying pattern of the data, especially when dealing with large datasets where the distribution is expected to follow a continuous and predictable mathematical form across the range of values.

197. (C) Correlational research
A research study that examines the relationship between variables as they exist in the real world, without any attempt by the researcher to manipulate or control those variables, is called correlational research. This design is used to identify associations and patterns between different factors. While correlational research can show that variables change together, it cannot establish a cause-and-effect relationship. It is highly valuable for studying complex social phenomena where experimental manipulation would be unethical or physically impossible to carry out.

198. (C) Statement I is true, but Statement II is false.
In probability theory, certain laws are fundamental. Statement I is true; the sum of the probabilities of all possible, mutually exclusive outcomes for a single event must always equal 1. However, Statement II is false because Bayes' Theorem is specifically designed to update probabilities using prior information or evidence, rather than being used for simple calculations without any prior data. Understanding these core principles is essential for correctly applying probabilistic models and statistical reasoning to complex research data and uncertain real-world scenarios.

199. (D) It generally has a larger sampling error for the same sample size due to homogeneity within clusters.
The main disadvantage of cluster sampling compared to stratified sampling is that it generally has a larger sampling error for the same total sample size. This occurs because individuals within the same cluster, such as households in one village, tend to be more similar to each other than to the population as a whole. This internal homogeneity reduces the precision of the overall estimates. To compensate for this loss of efficiency, researchers often need to use a larger sample size in cluster designs.

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200. (A) Both A and R are true and R is the correct explanation of A.
Ethical considerations are fundamental throughout the entire research process, from the initial design to the final dissemination of findings. Adhering to these principles is essential for protecting the rights, safety, and well-being of the participants involved in the study. Furthermore, ethical conduct ensures the overall integrity, credibility, and validity of the research itself. By maintaining high ethical

is actually true. A very low p-value suggests that the observed data is unlikely to be due to chance, leading the researcher to reject the null hypothesis in favor of the alternative hypothesis, thereby identifying a statistically significant relationship or effect.

215. (D) To create a practical, cost-effective plan when no complete list exists.
The primary reason for using multi-stage sampling is to create a practical and cost-effective sampling plan when a complete list of the entire population—a sampling frame—does not exist. By selecting participants in successive stages, beginning with large geographic clusters and moving down to individual households, researchers can efficiently collect representative data over a wide area. This hierarchical approach significantly reduces travel time and logistical costs compared to simple random sampling, making large-scale national or regional surveys feasible and scientifically sound.

216. (A) Introduction, Methods, Results, and Discussion
The IMRaD format is a standardized structure used for organizing research reports and scientific papers. It stands for Introduction, Methods, Results, and Discussion. This format provides a logical narrative flow, starting with the background and research problem (Introduction), describing how the study was conducted (Methods), presenting the findings (Results), and finally interpreting what those findings mean in a broader context (Discussion). This structure ensures that all essential information is included and allows readers to easily find and evaluate specific parts of the study.

217. (C) Equity
When an evaluation examines how a programme has affected different groups within a population, such as comparing outcomes between men and women or rural and urban residents, it is focusing on the dimension of equity. Equity in health means that everyone has a fair opportunity to attain their full health potential and that no one is disadvantaged. Analyzing these disparities helps researchers and policymakers determine whether the programme is reaching the most vulnerable groups and working to reduce existing health inequalities.

218. (A) Polygon data
In GIS, the polygon data type is most appropriate for representing a country's administrative boundaries. A polygon is a closed geometric shape that defines a specific area on a map. This format is ideal for capturing regions like countries, states, or districts, as it allows for the storage of attribute data related to the entire area, such as population or land use. Polygon data is essential for spatial analysis involving territory, zoning, and regional planning within a Geographic Information System.

219. (D) It provides a measure of estimated value error.
Kriging is considered a more sophisticated spatial interpolation technique than simpler methods like Inverse Distance Weighting (IDW) because it provides a measure of the error or uncertainty associated with the estimated values. While IDW is a deterministic method based solely on distance, Kriging is a geostatistical method that incorporates the spatial auto-correlation between sampled points. This statistical approach allows for more accurate predictions and gives researchers a clear understanding of the reliability of the resulting continuous surface, which is critical for precision mapping.

220. (B) Aims to solve a specific, immediate problem and involves the practitioners in the research process.
The key difference between action research and traditional research lies in its primary goal and its participatory nature. Action research is specifically designed to solve a practical, immediate problem within a particular setting, and it actively involves the practitioners—such as teachers or health workers—in the research process. This cyclical process of planning, acting, observing, and reflecting ensures that the findings are directly applicable and that those most affected by the problem are part of the solution, fostering organizational change and improvement.

221. (C) Validity
If a measure of job satisfaction does not correlate with observable, related indicators like employee turnover or absenteeism, it likely has a problem with validity. Validity refers to whether an instrument actually measures the concept it

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implications of the findings and offering insights into why certain patterns or relationships were observed, thereby adding depth and relevance to the research.

208. (B) Support decision-making in health programme management through routine data collection.
The primary purpose of the Health Management Information System (HMIS) is to support informed decision-making in the management of health programmes through the routine collection and analysis of service statistics. By providing continuous data on health facility performance, patient visits, and resource utilization, HMIS allows managers to track progress, identify gaps in service delivery, and allocate resources more effectively. It is a vital tool for the ongoing monitoring and improvement of healthcare services within a national or regional health system.

209. (B) Vectorization
In GIS, vectorization is the process of converting a raster image, which is made up of a grid of cells, into a vector format consisting of discrete geometric shapes like points, lines, or polygons. For example, converting a raster representation of a river into a digital line feature allows for more precise mapping and network analysis. This transformation is essential for making scanned maps or satellite imagery compatible with vector-based spatial analysis tools and for creating high-quality, scalable cartographic products.

210. (A) I, II, and III only
Effective programme management and spatial analysis rely on clear concepts. A framework outlines the key questions and methods for evaluation, and input indicators measure resources like the number of available doctors. Furthermore, geo-coding is the essential process of assigning geographic coordinates to data points. However, the raster model uses a grid of cells rather than polygons, and summative evaluation is conducted at the end of a programme. These first three statements accurately describe foundational principles used in monitoring and spatial research.

211. (C) To systematically understand, describe, predict, and explain social phenomena.
The fundamental purpose of social science research is to systematically understand, describe, predict, and explain various social phenomena. By using rigorous methodologies and empirical evidence, researchers seek to gain insights into human behavior, societal structures, and social interactions. This scientific approach helps to move beyond common sense or personal intuition, providing a more objective and evidence-based understanding of the complexities of the social world. This knowledge can then be used to inform public policy, solve social problems, and improve societal well-being.

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212. (D) Participant attrition or drop-out
A panel study is a powerful research design that tracks the exact same individuals over an extended period, allowing for the analysis of individual-level change. However, its most significant challenge is participant attrition, or drop-out, which occurs when individuals leave the study before its completion. This can happen due to many factors, such as moving away, loss of interest, or death. Attrition can introduce bias and reduce the study's statistical power, potentially compromising the overall validity and generalizability of the findings.

213. (A) Both Statement I and Statement II are true.
Qualitative and quantitative methods serve different but complementary purposes in research. Qualitative methods, such as interviews and focus groups, are best for exploring a topic in-depth and understanding the social and cultural context. Quantitative methods, such as structured surveys and experiments, are superior for testing specific hypotheses and generalizing results from a sample to a larger population through statistical analysis. Both statements are true, and using a combination of both—a mixed-methods approach—often provides the most comprehensive understanding of a research problem.

214. (B) Reject or fail to reject the null hypothesis.
The p-value is a critical tool in statistical analysis that helps a researcher decide whether to reject or fail to reject the null hypothesis. It represents the probability of observing the study's results, or more extreme results, if the null hypothesis

This means that nearby locations are more likely to have similar values than locations that are far apart. Positive spatial auto-correlation indicates clustering of similar values, while negative auto-correlation indicates dispersion. Understanding this geographic dependency is crucial for spatial analysis, as it violates the assumption of independence used in many traditional statistical tests, requiring specialized spatial models to ensure accurate results.

229. (C) A true experimental study
This study is a classic example of a true experimental design. The researcher deliberately manipulates an independent variable—the type of fertilizer—and uses random assignment to place the 20 plots into either a treatment group (new fertilizer) or a control group (standard fertilizer). By controlling for other factors and measuring the outcome (crop yield), the researcher can confidently determine whether any observed difference in yield is truly caused by the new fertilizer, establishing a clear cause-and-effect relationship between the variables.

230. (B) I, III, and IV only
Data analysis is based on several key statistical principles. An observed association between variables may not be causal, as it could be due to chance or a third factor. Regression analysis is an essential tool for modeling relationships and making predictions. Furthermore, a smaller p-value, such as 0.01, indicates a higher level of statistical significance than 0.05. However, a correlation of +1.0 signifies a perfect direct linear relationship, not an inverse one. These three accurate statements highlight the fundamental logic used to interpret scientific data.

231. (D) Provide a list from which to draw a representative sample.
The primary purpose of a sampling frame is to provide a complete and accurate list of all units in a target population from which a representative sample can be drawn. This list serves as the operational definition of the population and is essential for any probability sampling design. Without an adequate sampling frame, it is impossible to give every member of the population a known chance of selection, which can lead to biased samples and limit the ability to generalize the study's findings back to the whole.

232. (A) A hypothesis is a predictive statement that can be tested.
The defining characteristic that distinguishes a research hypothesis from a research question is that a hypothesis is a predictive statement that can be empirically tested. While a research question simply asks about a potential relationship or phenomenon, a hypothesis proposes a specific, tentative answer that can be supported or refuted through data collection and analysis. This predictive nature makes the hypothesis a more direct guide for the investigation, focusing the research on testing a concrete proposition and producing a definitive scientific answer.

233. (C) Not request that the researcher engage in unethical behavior like altering results.
The Client's Ethical code primarily obligates the funding agency or client to act with professional integrity throughout the research relationship. This includes a commitment not to request or pressure the researcher to engage in unethical behavior, such as altering data or results to produce a more favorable outcome. By respecting the researcher's objectivity and scientific independence, the client helps to ensure the overall credibility and social value of the work, which is essential for maintaining public trust in the research process and its findings.

234. (A) The delivery of outputs is expected to lead to the achievement of outcomes.
In the logical framework of programme evaluation, there is a clear hierarchical relationship between outputs and outcomes. The delivery of outputs—the direct products and services of a programme—is expected to lead to the achievement of outcomes, which are the intermediate changes in the target population's behavior or status. While outputs reflect the successful completion of programme tasks, outcomes represent the actual benefits received by the beneficiaries. This causal sequence is fundamental to understanding how a programme is intended to create positive change.

235. (D) A line representing a highway.
In a Geographic Information System (GIS), a line representing a highway is a perfect example of vector data. The vector model uses geometric primitives like points, lines, and polygons to represent discrete geographic features with

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claims to measure. In this case, the lack of correlation suggests that the tool may not be capturing the true nature of job satisfaction as it relates to real-world outcomes. Ensuring validity is essential for making sure that research findings are meaningful and that conclusions are based on accurate data.

222. (D) The odds of the outcome are the same for the exposed and unexposed groups.
An odds ratio (OR) of 1.0 indicates that the odds of an outcome occurring are exactly the same for both the exposed and unexposed groups. This means there is no association between the exposure factor and the outcome being studied. In statistical analysis, an OR of 1.0 serves as the null value. Values significantly greater than 1.0 suggest a positive association or increased risk, while values significantly less than 1.0 suggest a negative association, which could indicate that the exposure has a protective effect.

223. (A) A range of values constructed from sample data so that the population parameter is likely to occur within that range at a specified probability.
The concept of a confidence interval refers to a range of values, calculated from sample data, that is likely to contain the true population parameter at a specified level of probability, such as 95%. It provides a measure of the precision and uncertainty of a sample estimate. A narrower interval suggests a more precise estimate, while a wider one indicates more variability. Confidence intervals are a fundamental part of statistical inference, allowing researchers to express the reliability of their findings beyond a single point estimate.

224. (B) A respondent misunderstanding a survey question.
A non-sampling error is any error in a study that occurs due to factors other than the act of taking a sample. A classic example is a respondent misunderstanding a survey question and providing an inaccurate answer. Other examples include data entry mistakes, poorly designed questionnaires, and participant non-response. Unlike sampling error, which arises from random chance and can be modeled mathematically, non-sampling errors are related to the quality of the research design and administrative procedures, and they can introduce significant bias into findings.

225. (A) P-4, Q-2, R-3, S-1
Research ethics involve several key principles with distinct applications. Beneficence focuses on maximizing potential benefits while minimizing any risk of harm to participants. Justice ensures the fair distribution of the study's burdens and benefits. Anonymity is applied when there is no link between the respondent's identity and their data. Confidentiality is used when the researcher knows the participant's identity but keeps it secret. Correctly applying these principles is essential for protecting participants and ensuring that the research is conducted in a responsible and respectful manner.

226. (A) The direct products and services delivered by the programme.
An output indicator in programme evaluation specifically measures the direct products and services delivered as a result of the programme's activities. These are the immediate, tangible results of the intervention, such as the number of people trained, the number of vaccines administered, or the quantity of health materials distributed. While outcome and impact indicators look at changes in the population, output indicators provide a measure of the programme's reach and the successful completion of its planned tasks and services.

227. (C) Situation or relative location
In GIS and geography, when the location of a place is defined by its position in relation to other geographic features, it is known as its situation or relative location. Unlike absolute location, which uses precise coordinates like latitude and longitude, relative location describes a place in terms of its connectivity, accessibility, and relationship to its surroundings. This concept is essential for understanding how a place is influenced by its proximity to resources, transportation networks, and other population centers in a wider spatial context.

228. (D) The correlation of a variable with itself through space.
In the context of spatial statistics, auto-correlation refers to the degree to which a variable's values are correlated with themselves through space.

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standards, researchers preserve public trust in science and ensure that their work contributes positively to society while respecting the dignity of individuals.

201. (C) Monitoring
Monitoring is the systematic and continuous process of tracking a programme's inputs, activities, and outputs to ensure that implementation is proceeding as planned. It involves regular data collection and reporting to provide managers with real-time feedback on progress. This allows for the timely identification and resolution of operational problems. While evaluation looks at broader effectiveness and impact, monitoring focuses on the day-to-day management and operational efficiency of the programme to keep it on track toward its intended goals.

202. (A) The internal, physical characteristics of a place (e.g., climate, soil, water supply).
In geography, the concept of "site" focuses on the internal, physical characteristics of a specific place. These include natural features such as climate, soil type, topography, and the availability of water and other essential resources. Understanding the site is important because these physical attributes directly influence how a place is used, its potential for development, and the types of activities that can be sustained there. Site attributes are localized and describe the inherent nature of the geographic point being studied.

203. (D) Spatial correlation and regression
In spatial analysis, spatial correlation and regression are the techniques most analogous to traditional statistical methods but specifically adapted for spatially referenced data. These methods explicitly account for the fact that geographic locations are often not independent and that nearby places may influence each other. By modeling these spatial dependencies, researchers can more accurately understand the relationships between variables across space, identify significant geographic trends, and make more reliable predictions that incorporate the inherent spatial structure of the data.

204. (B) Random assignment of subjects to groups.
The fundamental difference between a true experiment and a quasi-experiment lies in the use of random assignment. In a true experiment, participants are randomly assigned to either the treatment or control group, which helps ensure that the groups are equivalent at the start of the study. A quasi-experiment, however, lacks this random assignment and instead uses existing groups or non-random methods. While both involve manipulation of an independent variable, only true experiments provide the high level of control necessary to minimize selection bias.

205. (C) Logistic regression
Logistic regression is the most suitable statistical technique for predicting a binary outcome, such as "pass/fail" or "yes/no," from a set of independent variables. Unlike linear regression, which is designed for continuous dependent variables, logistic regression models the probability of the specific event occurring. The results are expressed as odds ratios, which provide an interpretable measure of how each independent variable increases or decreases the likelihood of the binary outcome, making it an essential tool for classification and risk analysis.

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206. (D) Snowball sampling
Snowball sampling is a non-probability technique where the initial participants are asked to recommend or refer other potential participants from their own social or professional networks. This method is particularly useful for studying hard-to-reach or hidden populations, such as individuals with rare diseases or members of marginalized groups, where a complete sampling frame does not exist. As each participant recruits more people, the sample "snowballs" in size, allowing the researcher to access individuals who might otherwise be difficult to find.

207. (A) Explain findings, relate them to hypotheses, and compare with literature.
A well-written 'Interpretation of Results' section in a research report must go beyond simply stating the statistical findings. It should explain the meaning of the results, relate them back to the original hypotheses, and compare them with existing literature in the field. This section provides the narrative that connects the data to the broader scientific context, discussing the

distinct shapes and boundaries. In this case, the highway is a linear feature defined by a series of connected coordinates. Unlike raster data, which uses a grid of cells to represent continuous surfaces, vector data is highly precise for showing the exact location and shape of discrete infrastructure elements.

236. (B) Uses the midpoints of the class intervals for plotting.
While both are used to represent frequency distributions, a key difference is that a frequency polygon uses the midpoints of the class intervals to plot frequencies, which are then connected with straight lines. In contrast, a histogram uses bars whose width represents the class interval and height represents the frequency. The frequency polygon provides a smoother visual representation of the distribution and is particularly useful for comparing multiple data sets on the same graph without the clutter that multiple overlapping histograms would create.

237. (C) Empirical evidence, logical reasoning, and systematic processes.
The scientific method is a systematic approach to research that is characterized by its reliance on empirical evidence, logical reasoning, and structured processes. Unlike methods based on personal intuition or traditional authority, the scientific method involves formulating testable hypotheses, collecting and analyzing data objectively, and drawing conclusions that are grounded in observed facts. This commitment to transparency, replication, and evidence ensures that research findings are as accurate, reliable, and unbiased as possible, forming the basis of modern scientific knowledge across all disciplines.

238. (D) The researcher is certain the IV caused the DV change.
A study's findings are considered to have high internal validity when the researcher can be confident that the changes observed in the dependent variable were directly caused by the manipulation of the independent variable rather than by other confounding factors. Achieving high internal validity requires rigorous experimental controls, such as random assignment and the use of a control group, to minimize potential bias and ensure that the study's conclusions accurately reflect the causal relationship within the specific group and setting being investigated.

239. (A) Every unit in the population has a known, non-zero probability of being selected.
The most significant difference between probability and non-probability sampling is that in probability sampling, every unit in the population has a known and non-zero probability of being selected. This random selection process minimizes bias and allows for the use of statistical theory to estimate the precision of the results and to generalize findings from the sample back to the entire population with a known level of confidence. Non-probability sampling, while often more convenient, does not provide this same statistical basis for generalization.

240. (B) I, III, and IV only
Responsible research involves clear communication and high ethical standards. A detailed report must transparently discuss study limitations to help readers interpret results. Maintaining a logical and clear structure is essential for effective reporting. Furthermore, following an ethical code ensures study integrity and participant protection. However, informed consent is often an ongoing process, not just a one-time event, and using another's work without proper citation is plagiarism. These first three statements correctly identify the core requirements for ethical and professional scientific reporting.

241. (B) Availability of health infrastructure
The indicator "Number of hospital beds per 1,000 population" is a standard measure of the availability of health infrastructure within a region. It specifically quantifies the physical capacity of the healthcare system to provide inpatient care to its citizens. While this indicator does not measure the quality or equity of services directly, it provides an essential baseline for understanding the system's ability to meet the healthcare needs of the population and for identifying areas with significant shortages in basic health resources and facilities.

242. (A) Continuous data
Continuous data in GIS represents phenomena that vary across a surface without clear or distinct boundaries, such as temperature, elevation,

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or air pollution levels. These variables exist at every point across the landscape, and their values change gradually from one location to another. Because of this continuous nature, this type of data is most efficiently and accurately represented using the raster data model, where a grid of cells captures the varying values across the entire geographic area being studied.

243. (A) Both Statement I and Statement II are true.
Exploratory research is often a precursor to more structured, conclusive research, as it helps to define problems and develop hypotheses when little prior knowledge exists. Statement I is therefore true. Statement II is also true, as action research is a cyclical process involving planning, acting, observing, and reflecting to solve practical problems within a specific context. Both statements accurately describe the fundamental nature and purpose of these two common research approaches, which are used to gain initial insights and foster organizational improvement.

244. (D) Cannot be calculated in case-control studies.
A key limitation of using Relative Risk (RR) is that it cannot be calculated directly in case-control studies. This is because case-control designs start with people who already have the outcome and look backward at exposure, which does not allow for the calculation of the incidence or probability of the event occurring. In these situations, researchers instead use the Odds Ratio (OR) as an estimate of the Relative Risk. RR is most appropriately used in prospective studies, such as cohort studies and clinical trials.

245. (B) III, I, II, IV
Determining a sample size follows a logical sequence to ensure statistical power. The process typically begins with establishing the desired confidence level. Next, the researcher must decide on the acceptable margin of error. After this, an estimate of the variability of the characteristic in the population is identified. Finally, these values are applied to a mathematical formula to calculate the exact number of participants needed for the study. This systematic approach ensures that the resulting sample is large enough to provide reliable and precise population-level estimates.

246. (B) A statement of 'no effect' set up to be statistically tested.
A null hypothesis is a formal statement of 'no effect' or 'no difference' that is set up to be statistically tested using sample data. It represents the baseline assumption that any observed relationship or difference in the sample is due purely to chance. The goal of hypothesis testing is to determine whether there is sufficient evidence to reject the null hypothesis in favor of an alternative hypothesis. This objective process allows researchers to make data-driven conclusions about the existence of real-world effects and relationships.

247. (D) Target audience and level of detail
The primary difference between a brief report and a detailed one lies in their target audience and the level of detail provided. A brief report is designed to give a concise summary of the most important findings and recommendations, often intended for busy managers and policy-makers who need quick insights. A detailed report, however, is a comprehensive document that includes thorough descriptions of the methodology, theoretical framework, and extensive data analysis, intended for a professional audience that requires full scientific transparency and detail.

248. (A) Track whether programme activities are being implemented as intended.
The most important purpose of a process indicator in programme monitoring is to track whether the programme's activities and tasks are being implemented as intended. By measuring the progress and quality of the implementation phase, process indicators help managers identify delays or deviations from the original plan. This real-time feedback is essential for making immediate operational adjustments to ensure that the programme is functioning effectively and that it remains on track to deliver its outputs and achieve its broader intended goals.

249. (C) Raster data model
A digital map where the geographic area is represented by a grid of equally sized cells, with each cell containing a specific value such as land use or elevation, is based on the Raster data model. This model is ideal for representing continuous phenomena across a surface. Each cell, or pixel, acts as a unit of measurement for a particular

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attribute at that location. The Raster model is highly efficient for complex spatial analysis and modeling, particularly for environmental and geophysical research and data interpretation.

250. (A) Predict values at unknown locations from data at known locations.
Spatial interpolation is a fundamental method used in GIS to predict or estimate values for locations where no measurements have been taken, based on the known values at surrounding sampled locations. This process relies on the assumption that geographic features close to each other are more likely to be similar than those further apart. It is commonly used to create continuous surfaces from discrete point data, such as generating maps for temperature, rainfall, or elevation across an entire region using a limited number of observation points.

251. (B) The conceptual framework
The conceptual framework serves as the intellectual foundation for scientific studies. It involves defining key concepts and establishing theoretical underpinnings. Within this framework, researchers formulate specific research questions and hypotheses. It delineates the scope and boundaries of an inquiry by drawing upon existing literature to create a structured approach before data collection begins.

252. (A) The empirical framework
The empirical framework focuses on the observational aspects of scientific research. It emphasizes the systematic collection of real-world data to test theoretical propositions. Grounded in the principle of verifiability, this stage requires that phenomena are both observable and measurable. This ensures that the research remains objective and its findings can be independently checked against physical evidence.

253. (C) To process, interpret, and draw conclusions from data.
The analytical framework provides a structured method for interpreting collected data. It encompasses various techniques used to process evidence and make sense of empirical findings. This process allows researchers to assess relationships between variables and draw valid conclusions. Ultimately, this framework relates findings back to the initial theory, contributing significantly to the broader body of scientific knowledge.

254. (D) The rigour, validity, and quality of the research.
Effective scientific research relies on the robust integration of conceptual, empirical, and analytical dimensions. When these three frameworks work together seamlessly, they ensure the overall rigour and validity of the study. This comprehensive approach maintains high quality in social science research. Each dimension supports the others, creating a cohesive structure that leads to more credible and significant findings.

255. (C) The analytical framework, as it involves data interpretation.
Utilizing statistical techniques to analyze data falls under the analytical framework. This dimension is specifically designed to provide the tools necessary for processing evidence. By examining the relationship between variables, researchers can interpret empirical data systematically. This step is crucial for moving from raw observations to meaningful insights that can be related back to the study's conceptual foundation.

256. (B) Operations research
Operations research focuses on optimizing complex decision-making processes through mathematical and statistical modeling. Originally used in military and industrial contexts, it is now applied to improve service delivery systems. By calculating the most efficient distribution routes or resource allocations, this type of inquiry provides practical solutions for organizational challenges. It aims to maximize efficiency within specific operational constraints.

257. (D) Action research
Action research is a specialized form of inquiry designed to solve immediate problems in localized contexts. It is characterized by an iterative and participatory approach, often involving the practitioners themselves as co-researchers. This collaborative process focuses on implementing change and improvement within a specific setting. It bridges the gap between theoretical knowledge and practical application through continuous cycles of reflection.

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294. (B) The routine tracking of service statistics for programme monitoring.
The Health Management Information System is a fundamental tool for programme monitoring. It systematically collects and reports service-level data, providing managers with the statistics needed to track progress against set targets. By generating regular indicators on inputs, processes, and outputs, the system enables evidence-based decision-making and allows for the day-to-day management of health services and resource allocation.

295. (C) Input indicator
An input indicator measures the resources allocated to a programme, such as financial disbursements, personnel, or equipment. These indicators are crucial for monitoring whether the necessary foundation for activities has been established. Tracking inputs is the first step in understanding the implementation process, ensuring that the planned resources are actually available to be converted into outputs and eventual outcomes.

296. (D) Vector data (polygons)
Vector data represents discrete geographic features using points, lines, and polygons. In a Geographic Information System, administrative boundaries like districts or cities are typically represented as polygons, which are closed shapes defined by coordinates. This format is ideal for mapping specific zones with clear edges, allowing for spatial analysis of area-based data such as population density or resource distribution.

297. (A) Geo-referencing
Geo-referencing, also known as geo-coding, is the foundational process of assigning geographic coordinates to data points. For example, by giving latitude and longitude to a list of street addresses, researchers can plot them on a map. This enables disparate datasets to be layered and analyzed together based on their shared spatial location, which is central to all GIS-based analysis.

298. (B) Raster uses a grid of cells, while vector uses points, lines, and polygons.
Raster and vector data represent the two primary ways of managing geographic information. Raster data uses a grid of pixels or cells to represent continuous phenomena like elevation or temperature. In contrast, vector data uses points, lines, and polygons to represent discrete features like hospitals, roads, or district boundaries. Choosing between them depends on the nature of the spatial phenomena being studied.

299. (B) Raster data
Continuous phenomena that change across space, such as land surface temperature or elevation, are best represented using raster data. This format uses a grid of cells, with each cell containing a value representing the measurement at that specific location. Satellite imagery naturally fits this structure, providing a detailed and continuous view of environmental variables that are difficult to capture with vectors.

300. (A) Location
In geographic studies, location refers to the position of a place relative to other phenomena or objects. This is distinct from site, which describes the internal physical characteristics of a specific area. Understanding location is vital for spatial analysis, as it helps researchers identify patterns, distances, and relationships between different geographic features, such as the proximity of health clinics to populations.

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conditions. It is a fundamental requirement for any credible research tool before assessing its accuracy.

267. (B) A measure can be reliable without being valid.
Reliability and validity are distinct but related concepts in research design. Reliability refers to the consistency of a measure, while validity refers to its accuracy. A measure can be highly reliable by producing consistent results but still be invalid if it does not measure the intended concept. However, for a measure to be valid, it generally requires high reliability.

268. (A) External validity
External validity refers to the extent to which research findings can be generalized to other people, settings, or times. When considering whether results from a specific group, like university students, apply to the broader adult population, researchers are assessing this type of validity. Maintaining high external validity is essential for ensuring that the study has real-world relevance and applicability.

269. (C) Internal validity, due to control over confounding variables.
Tightly controlled laboratory experiments are characterized by high internal validity because they allow researchers to minimize the influence of confounding variables. By manipulating the independent variable while keeping other factors constant, researchers can be more confident in establishing a causal relationship. However, this high level of control often comes at the expense of external validity or real-world generalizability.

270. (D) Internal validity
Internal validity is the degree of confidence that a causal relationship is trustworthy and not influenced by external factors. In a study claiming a drug reduces blood pressure, internal validity ensures the observed change is due to the medication itself rather than confounding variables. Higher internal validity strengthens the claim that the intervention is truly responsible for the measured outcome.

271. (C) What is the percentage reduction in infection rates after an intervention?
Quantitative methods are ideal for measuring the extent of a phenomenon and testing hypotheses using numerical data. Calculating the percentage reduction in infection rates requires statistical analysis of measurable outcomes in a population. While qualitative methods explore deep meanings and experiences, quantitative approaches provide the objective data needed to determine “how much” or “how many” in a given research context.

272. (B) Case-control studies
The odds ratio is a key statistical measure of association typically calculated in case-control studies. It represents the odds of an outcome occurring in an exposed group compared to the odds in a non-exposed group. This measure is particularly useful for studying rare conditions or outcomes where the relationship between a specific exposure and a result needs to be quantified.

273. (D) RR compares probabilities in cohort studies, while OR compares odds in case-control studies.
Relative risk and odds ratio serve as distinct measures of association in population health research. Relative risk compares the probability of an outcome in exposed versus non-exposed groups and is used in cohort studies. Conversely, the odds ratio compares the odds of an outcome occurring and is the standard measure in case-control studies. Each is tailored to specific longitudinal research designs.

274. (A) Relative risk
Relative risk, or risk ratio, is the primary measure of association derived from cohort studies. It compares the probability of a specific outcome occurring in an exposed group, such as smokers, to the probability in a non-exposed group over a period. A finding that one group is twice as likely to develop a disease is a direct expression of this ratio.

275. (C) The credibility of the evaluation’s findings.
High data quality is essential in evaluation research because it directly impacts the credibility of the findings. Accurate and reliable data ensure that the conclusions drawn about a program’s effectiveness are trustworthy. If data quality is compromised, the results of the evaluation may be dismissed, undermining the entire research effort and potentially leading to poor policy or management decisions.

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258. (A) Formative research, as it informs programme design.
Formative research is developmental and takes place during the planning stages of a program. By conducting focus groups with the target audience, researchers gather information to shape and refine the intervention. This ensures the campaign is relevant, acceptable, and well-designed before full implementation. This proactive approach helps identify potential barriers and tailors the content to specific needs.

259. (C) Formative research is conducted to shape a programme, while evaluation assesses its outcomes.
Formative research and program evaluation differ primarily in their timing and objectives. Formative research occurs during the development phase to refine a program's design and relevance. Conversely, program evaluation is a systematic assessment of an ongoing or completed initiative. It focuses on judging merit and determining whether intended outcomes were achieved, providing accountability and lessons for future programs.

260. (A) Programme evaluation research
Assessing the success of a long-term national program involves program evaluation research. This systematic process judges the merit and significance of an initiative by measuring its impact on intended outcomes. By determining if child stunting rates were reduced, researchers provide essential feedback on program effectiveness. This evaluation offers critical lessons for future health initiatives and ensures institutional accountability.

261. (D) The random assignment of subjects to groups.
Random assignment is the defining characteristic that separates true experimental studies from quasi-experimental designs. In a true experiment, subjects are assigned to treatment groups by chance, allowing for strong causal inferences. Quasi-experimental studies may use control groups but lack this randomization, often due to ethical or logistical constraints. This distinction is vital for determining the level of internal validity.

262. (B) Panel study design
A panel study design involves collecting data from the same individuals at multiple points in time. This longitudinal approach is highly effective for analyzing individual-level change and understanding developmental trends. By tracking students from their first year to their final year, researchers can establish a clear temporal order between variables. This makes it a powerful tool for inferring causality.

263. (C) An observational descriptive study
An observational descriptive study aims to systematically describe a population or phenomenon without any researcher intervention. By measuring the prevalence of a health condition as it naturally occurs, the study avoids manipulating variables. This design is ideal for establishing baseline data and identifying patterns within a specific group. It focuses on documenting "what is" rather than testing causal relationships.

264. (D) Analyze individual-level change over time.
The primary strength of a panel study design lies in its ability to track individual-level changes over time. By repeatedly measuring the same group of participants, researchers can observe how specific factors evolve within individuals. This longitudinal data is crucial for understanding developmental trajectories and establishing temporal sequence. It provides deeper insights into behavioral shifts than cross-sectional or other observational methods.

265. (A) Quasi-experimental
A quasi-experimental design is used when researchers compare different groups but cannot randomly assign participants to those groups. While this design involves manipulating an independent variable, such as a teaching method, and includes comparison groups, the lack of randomization introduces potential biases. It is often employed in educational or real-world settings where strict experimental control is not feasible or ethical.

266. (B) Reliability
Reliability refers to the consistency and stability of a measurement over time. When a questionnaire produces highly similar scores for the same individuals on separate occasions, it demonstrates high reliability. This characteristic ensures that the instrument is dependable and that findings are repeatable under consistent

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A strong positive correlation indicates that as one variable increases, the other also tends to increase. However, this finding alone does not imply a causal relationship; it merely highlights a consistent pattern in the data that warrants further analytical investigation.

286. (D) Sampling frame
A sampling frame is a comprehensive list of every sampling unit within a defined population. It serves as the actual source from which a sample is drawn using a specific design. Ensuring the frame is accurate and complete is vital for minimizing non-sampling errors, as a faulty frame can lead to results that do not accurately represent the entire population.

287. (C) Stratified random sampling
Stratified random sampling involves dividing a population into distinct, homogeneous subgroups called strata based on specific characteristics. Researchers then draw a separate random sample from each of these strata. This technique ensures that all subgroups are adequately represented in the final sample, which can increase the precision of the estimates compared to using a simple random sampling approach.

288. (B) Sampling error
Sampling error is the natural discrepancy between a sample statistic and the true population parameter that occurs due to random chance during the selection process. This type of error is inherent in all sampling and can be quantified using the standard error. Increasing the sample size generally reduces this error, leading to more precise estimates of the population's true characteristics.

289. (D) Systematic random sampling
Systematic random sampling is a method where researchers select units from a list at regular, pre-defined intervals. This process begins with a random starting point and then proceeds by choosing every "nth" individual thereafter. It is often easier to implement than simple random sampling and ensures that the sample is spread evenly across the entire sampling frame or population list.

290. (A) It is a systematic error that can occur during data collection or processing.
Non-sampling errors are systematic mistakes that can occur at any stage of the research process, including data collection, entry, or analysis. Unlike sampling errors, they are not caused by random chance and cannot be reduced by simply increasing the sample size. Examples include non-response bias, measurement errors, or a faulty sampling frame, all of which can significantly bias research findings.

291. (C) How many training sessions for health workers were conducted last month?
Programme monitoring is a continuous management function that tracks activities against planned targets. It primarily asks questions about inputs and outputs, such as the number of training sessions held or supplies delivered. This routine tracking helps managers identify if the programme is being implemented as intended, allowing for timely adjustments to ensure operational efficiency and project goal attainment.

292. (A) Output indicator
An output indicator measures the direct products or services delivered by a programme, such as the number of children who received vaccinations. These statistics are derived from routine data collection systems and provide immediate evidence of programme activity. While they track what has been accomplished, they do not measure broader outcomes or the long-term impact on the population's health status.

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293. (D) Monitoring is a continuous tracking of activities, while evaluation is a periodic assessment of effectiveness.
Monitoring and evaluation serve different but complementary roles in programme management. Monitoring is a continuous process that routinely tracks implementation through service statistics and indicators like inputs and outputs. Evaluation is a more periodic and in-depth assessment that judges a programme's overall effectiveness, relevance, and impact. While monitoring ensures things are on track, evaluation determines if the programme truly made a difference.

276. (A) Binomial distribution
The binomial distribution is used to model data where each trial has exactly two possible discrete outcomes, such as success or failure. In the case of coin flips, there are only two results: heads or tails. This distribution allows researchers to calculate the probability of a specific number of successes occurring across a fixed number of independent trials.

277. (D) To model the time until a specific event occurs.
The exponential distribution is frequently applied in survival analysis to model the duration of time until a specific event happens. This could include the time from a medical diagnosis to a patient's death or the time until a machine fails. It is a continuous probability distribution that helps researchers understand the frequency and timing of events in longitudinal studies.

278. (B) Revise the probability of a hypothesis given new evidence.
Bayes' Theorem provides a formal mathematical method for updating the probability of a hypothesis as new evidence or data becomes available. In research, this allows for the refinement of risk assessments or diagnostic probabilities based on the latest information. It is a powerful tool for integrating prior knowledge with current observations to arrive at a more accurate statistical inference.

279. (C) The Central Limit Theorem.
The widespread use of the normal distribution in statistics is justified by the Central Limit Theorem. This theorem states that the distribution of sample means will tend to be normal, regardless of the underlying population's distribution, as the sample size increases. This allows researchers to use normal-based statistical tests and inferences even when dealing with non-normally distributed populations.

280. (D) Binomial distribution
Data concerning households that either use or do not use modern contraception consists of two discrete outcomes for each unit. The binomial distribution is the most appropriate model for this type of binary data. It allows for the analysis of the number of "successes" within a sample, providing a mathematical basis for making inferences about prevalence within the larger population.

281. (A) Null hypothesis
A null hypothesis is a formal statement asserting that there is no effect or no difference between the variables being studied. Researchers use it as a starting point for statistical testing, aiming to determine if the observed data provides enough evidence to reject it. It represents the status quo, which the alternative hypothesis seeks to challenge with empirical evidence.

282. (B) The probability of observing the data if the null hypothesis is true.
The p-value, or level of significance, represents the probability of obtaining the observed results, or more extreme results, assuming the null hypothesis is true. A low p-value suggests that the data is unlikely to have occurred by chance alone if there were truly no effect. This value is critical for determining whether to reject or fail to reject hypotheses.

283. (B) Regression analysis
Regression analysis is a statistical method that goes beyond measuring the strength of a relationship between variables. It creates a mathematical model of that relationship, which allows researchers to predict the value of a dependent variable based on independent variables. This predictive power makes it an essential tool for understanding complex interactions and forecasting trends in various scientific fields.

284. (A) It is a plausible range for the true population mean height.
A 95% confidence interval provides a range of plausible values for a population parameter, such as mean height. It suggests that if the study were repeated many times, 95% of the calculated intervals would contain the true population mean. It offers a measure of uncertainty around the sample estimate, giving researchers a sense of how precise their measurement is.

285. (C) The strength and direction of a linear relationship.
Correlation is a statistical measure that describes the strength and direction of a linear relationship between two continuous variables.

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